

Vedic origin and classification of scripts

-Arun Kumar Upadhyay

(Summary)

Words are representation of universe called *Brahma*, so both need to have similar form-(1) *Brahma* and *Vāk* (sound, space) have equal 4 parts, (2) *Brahma* can be viewed in 6 ways, called *darśana* (philosophy). Number of elements in a *darśana* is same as number of letters in *darśavāk* (visible sound, script). (3) Mechanical world described by physics can be measured by 5 basic units. In that sense, it has 5 dimensions. *Chetanā* (it does *chayana*=ordering) or consciousness has 5 aspects making world of 5 to 10 dimensions. For these 6 dimensions, there are 6 branches of philosophy and 6 types of scripts as described below-

(1) *Gāyatrī Vāk-Gāyatrī* is a meter of 24 letters (syllables) and is measure of universe in the sense that gross structures starting with man, earth, solar system, galaxy, universe are successively 2^{24} times larger. It can have 2 more or less letters (22-26). Philosophy of measurable space is *Sāṅkhya*, having 5^2 elements. Roman and French scripts have similar forms with 25 or 26 letters. They have 5 vowels similar to *Avakahadā-chakra* for naming quarters of 27 *nakṣatras*.

(2) *Bṛhatī-vāk*-Its 36 letters are equal to 6^2 elements of *Śaiva darśana*. By adding 12 extra letters in *Avakahadā-chakra*, we get *Maya-lipi*. Scripts of this group are Hebrew, Latin, Russian and *Gurumukhī* of 35 letters. *Tamil* is short form of *Brāhma* having similar number.

(3) *Jagatī-Vāk*-It has 48(± 2) letters. It is measure of galaxy (49), so it is *Jagatī* (of world). 49 zones of galaxy are $49 = 7^2$ *Maruts* (winds). *Indra* (lord of east) formed *Deva-nāgarī* script with help of *Vāyu* (lord of north west). It is used from east to north west of India (lands of *Indra* and *Marut*). For 33 units of solar system, there are 33 consonants. Letters from k to h are symbols of *devas* (energy of solar zones), it being a *nagara* (arrangement) of *devas* in symbols, it is *deva-nāgarī*. Letters from a to h indicate galaxy or human body (self is called *Aham*). Its knower is called *Kṣetrajña*, so *kṣa*, *tra*, *jña* are added at end as measure of galaxy corona (*Goloka*). Only X (*kṣa*) is added in English.

(4) *Brāhma*-It has 82 letters for 8th dimension. Including *Kṣetrajña*, it has 67 letters , which is measure of visible universe (*Tapa loka* of *Brahmā*). Music has 66 letters. It continues as *Kannada* and *Telugu* scripts of south India where last *Brahmā Apāntaratamā* lived.

(5) *Vijñāna-vāk*-Any symbol can cover a plane in 17 ways. For 9th dimension, there are $17^2 = (8+9)^2$ symbols-needed to describe all sciences in Vedas. Number of letter parts (*varṇa*) in a syllable (*akṣara*) can be 8 =*akṣara* in a quarter of *Anuṣṭup* meter (8x4 letters). Central letter has 2 units of force to add 4 letters before or upto 3 after that. So, points of force are 9 equal to letters of *Bṛhatī* (9x4 letters). Thus, scientific language needs $8 \times 9 \times 4$ symbols. It has 36×3 vowels for 3 spaces in body for sound-chest, head and neck. There are 36×5 consonants for 5 places of contact in mouth cavity. Including unclassified *Aum*, we have $289 = 17^2$ letters.

(6) *Sāhasrī vāk*-For 10th dimension, number of letters are 10^3 to 10^4 in China and Japan which are beyond *Vyoma* (Tibet - *Trivistap*).

Puskara (Bukhara) at 12^0 west of Ujjain and 35^0 north was place of Human *Brahmā*. North west from him uses *Sāṅkhya* (Roman), north east writes from top to bottom, south west from right to left and India left to right. Discrete letters are form of *Gaṇeśa* (countable) while their sense (*rasa*) is form of *Sarasvatī*. Forms of letters have changed, but basic structure of script has remained the same.

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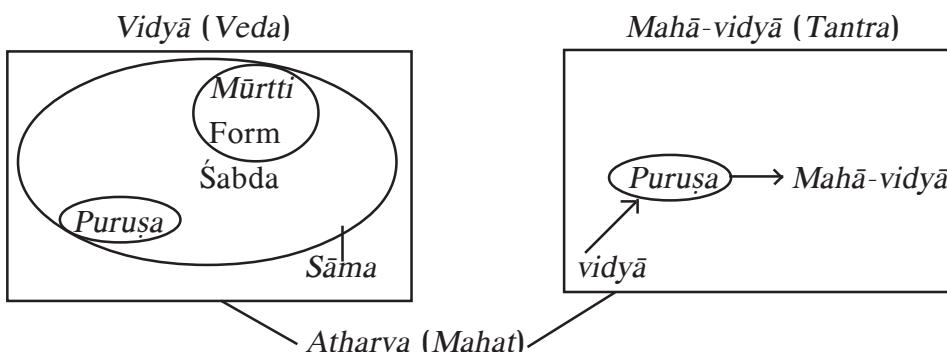
1. Veda as Śruti- Śruti means hearing, so Oxford scholars interpreted that Veda was learnt only by hearing and writing was not known at that time. This is obviously absurd logic. Thousands of pages can not be memorized by at least 500 generations only by hearing, when no Oxford scholar in past 200 years has been able to remember a single page of his own writing. Such logic was created to destroy Indian culture and Vedas which was primary aim of Boden chair set up in Oxford in 1831 for this purpose. With declared aim of destroying Vedic knowledge and establishing Christianity for making British rule permanent, such impossible and fake theories were propagated since past 250 years by Oxford followers in west and their Indian devotees. Veda means knowledge, but they call it ignorance of writing etc.

Veda is called Śruti in these senses-

(a) Form of written letters changes due to many reasons-instrument and medium of writing, individual style, change of place and times, subject matter and style.

(b) Śruti means perception by any of the 5 organs of sense by their 5 means-Śabda (sound, wave by ears), sparsā (touch, by tvachā =skin), rūpa (form, by eyes), rasa (taste, by tongue) and gandha (smell, by nose). These 5 mediums are subjects of Ākāśa (space), vāyu (motion), agni (compact energy, matter), āp (water, spread matter), Prthivī (compact base, earth). Creation started from the first element space ⁽¹⁾, whose subject sound is perceived by Śruti, so it includes all the 5 means of perception. Veda is science based on observation of nature (nisarga), so it is called Nigama. Technical knowledge for useful work comes from that, or by chain of personal instructors, so it is called Āgama (coming). That is also called Tantra, because it links many systems together-internal knowledge, outer activity, action and reaction. It is also link between 3 world systems of Vedas-Cosmic (ādhidaivika), physical (on earth, ādhibhautika) and Internal (within human body, ādhyātmika). Each single meaning is veda.

Any structure within a boundary is called Pura (town). Its arrangement (chayana) or its cause is Puruṣa. Puruṣa means man as well as all levels of world. Effect of surrounding (Mahar) on Pura is known by Śruti (sound and other 4 means)-that is veda or vidyā (knowledge). Effect of actions by Puruṣa on Mahar is Mahā-vidyā (Tantra).



(c) There are 3 steps of perception, so Veda is called Trayī (triple) also. Original unclassified Veda is Atharva. Tharva = to shake, Atharva = fixed frame. Thus, Trayī means 4 vedas = root Atharva + 3 branches-Rk, Yaju, Sāma. It is symbolised by Palāśa branch which ends into

3 leaves—that is used in ceremony for starting Vedic studies. Correspondingly, root verb *Vid* has 4 meanings in *Dhātu-pāṭha* (verb list) of *Pāṇini*⁽²⁾—

Subject	Veda	Meaning of verb <i>vid</i>
Form (<i>mūrtti</i>)	<i>Rk</i>	To exist
Motion (<i>gati</i>)	<i>Yaju</i>	To gain
Field (<i>Mahimā</i>)	<i>Sāma</i>	To know, to be place of consciousness.
Surrounding (<i>mahar</i>)	<i>Atharva</i>	To consider.

Vidyā is of 2 types ⁽³⁾-*Parā vidyā* (*vidyā*) which is unification or generalization. This is described by the root single *veda* called *Atharva*. Its classification part is *Aparā vidyā* which includes 3 branch *vedas*-*Rk*, *Yajur*, *Sāma*. *Aparā-vdyā* or *Avidyā* is science whose 5 stages are-1. *Avidyā* =classification, 2. *Asmitā* (identity of each class), 3. *Rāga*-link between 2 classes or objects, 4. *Dveṣa*-differences between 2 classes, 5. *Abhiniveśa* =settled rule or principle.

(2) Śruti and Darśana-*Śruti* (*veda*) is observation of each object or topic. *Darśana* (philosophy) is general view of scheme called birds eye view. *Śruti* is detailed knowledge, *darśana* is outer or superficial knowledge of an object. *Darśana* is *upāṅga* (subsidiary part) of *vedas* and is helpful in getting a general view and combining many parts. Both parts give complete view individually and generally.

There are 6 methods of having a general view—corresponding to 6 *Prajāpati*⁽⁴⁾ or 6 philosophy. Classification as per size give 17 *Prajāpati* also which will be explained later.

Viśva (world) means a system⁽⁵⁾ which is complete, closed and inter-connected. It has 5 stages of creation⁽⁶⁾ in space giving rise to 5 *mahābhūta* (great elements), 5 *tanmātrā* (units of measure), 5 *prāṇa* (flows of energy) etc. Levels higher than man are—

(a) **Parva** (stage) 1-Earth⁽⁷⁾ is the *koti* (limit) of world for man and is 10^7 times bigger, so 10^7 is called *Koti*. This is *Bhū* (earth) *maṇḍala* (sphere).

(d) **Parva** 2-This is sphere containing moon orbit called *Chāndra-maṇḍala*, in gravitational field of earth. It is relatively cool zone in solar system necessary for life forms-*Soma-maṇḍala*.

(c) **Parva** 3- For earth itself, limit of world is solar system whose earth (zone of creation) is again 10^7 times bigger, called *maitreya-maṇḍala*. In units of sun-diameter⁽⁸⁾, its diameter is 10^5 . Space of solar system is 100 times bigger, called its *dyu* (sky). Its size is 157.5 million sun diameters or 2^{30} times earth diameter. Within this zone, light of sun is more than the background (of galaxy).

(d) **Parva** 4-This is limit of world for sun and 10^7 times bigger⁽⁹⁾ than *maitreya-maṇḍala*. Being largest brick (*Iṣṭaka*) it is called *Paramesṭhī-maṇḍala*. As an egg (*aṇḍa*) of the Universe (*Brahma*), it is *Brahmāṇḍa*. As last limit of sun rays where sun is seen as a point, it is *parama-pada* (extreme step) of *Viṣṇu* (sun). Its corona is 10 times bigger, called *Kūrma* (doer, in shape of tortoise) in *vedas* as it creates galaxy. As a region of radiation, it is *Goloka*. Central rotating disc is like a river of this largest earth, called *Ākāśa-gangā*.

(e) **Parva** 5-This is infinite universe called *Svayambhū* (self created) *maṇḍala*, taken 10^7 times bigger than *Paramesṭhī*. It is Great *Puruṣa*⁽¹⁰⁾, 10 times bigger than *Bhūmi* (visible universe).

Due to 5 *parvas* and original uniform space, there are 6 *darśana* or 6 *Prajāpati*-one is for each *parva* and 1 is unification. Except *chandra-maṇḍala*, other spheres are successively bigger by 10^7 starting from man. These 4 spheres and 4 intermediate spaces are called 7 *lokas*. These are 7 heavens in Bible or 7 *Āśamān* in Koran. Among the 3 *lokas*, *Svayambhū* is formless, so there

are 6 *darśanas* which can be described ⁽¹¹⁾.

10 Dimensions-A point in a plane can be specified by 2 measures called co-ordinates from any chosen reference axes and origin. So it is called 2 dimensional. A point in space needs 3 co-ordinates, making it 3-dimensional. Number of quantities or attributes needed to describe a world concept is number of its dimensions. Universe has a total of 10 dimensions in Vedic theory which can be seen in many ways-

(a) There are 2 groups of 5-5 dimensions, so *pañcha* = 5, but its derivative *pañcha+ktin* = *Pankti* means ten. 5 dimensions are measurable by numbers upto infinite. Other 5 dimensions can be given attributes, but not exact measures. These are enclosed in a boundary, not infinite. 5 are measurable-so, there are 5 *tanmātrās* ⁽¹²⁾. Physics needs 5 basic units of measure as proved by Giorgi in 1911. Space is 3 dimensional. By adding time as a dimension, theory of Relativity has 4 dimensional space-time-continuum. Quality of space itself can be taken as a dimension, so Wien had formulated a 5-dimesional theory. Others are 5 attributes of consciousness, called *chetanā* which does *chayana* =selection, ordering.

(b) There are 5 gross levels starting with man, each bigger in a ratio of 10^7 . There are 7 smaller levels each smaller by 10^5 , starting with man. There is a cross-symetry of 5 and 7 levels in ratios of 7 and 5-all with base of 10. So, there should be 10 dimensions⁽¹²⁾.

(c) Creation is by 3 *guṇas* indicated by colours in same sense as colour of quarks. Their permutation can be of 10 types. Indicating them by a, b, c - these are-
a, b, c, ab, ba, ac, ca, bc, cb, abc.

These also make 10 dimensions.

(d) Due to 10 dimensions, words *daśa* (10), *daśā* (state), *diśā* (direction) all have same meanings. Earth is surronded by 7 layers of *vāyu* (air), each 10 times bigger (*Nārada purāṇa* 1/60, *Linga* 1/53/38, *Brahmāṇḍa* 1/2/2/34, *Vāyu* 51/32, 67/110 and quoted by astronomy texts like *Sūrya siddhānta* and *Siddhānta-śiromāṇi*). Thus, ratio of earth to next *loka* is 10^7 . This ratio is also called *Gāyatrī* (meter of 24 letters) as $2^{24}=10^7$. Thus, all *lokas* are measured by *gāyatrī* (*Tāṇḍya mahābrāhmaṇa* 15/10/9, 16/14/4 etc).

The Dimensions of world are-

- 0 Dimension-It is called *Chit* (zero space), or *śūnya* (zero), *vindu* (point).
- 1-Dimension-This is line (*rekhā*), ratio (linear) etc.
2. Dimension-This is *prṣṭha* (surface).
3. Dimension-This is *ghana* (cube), *vasti* (location), *dhāma* (space) etc. Three directions in space are 3 steps of *Viṣṇu*.
4. Dimension-This is matter indicated by 4 faced *Brahmā*.
5. Dimension-This is indicated by 5 faced *Śiva* called *Mahākāla*. *Kāla* (time) is perception of change. It is of 4 types in *Bhāgavata-purāṇa* (3/11)-(1) Irreversible change-*Nitya* (eternal) *kāla*-This always decays objects, called Thermodynamic arrow of time in modern physics. (2) Cyclic changes-measured by cycles of day, month, year or other cycles of creation (*yajña*)-*janya* (creative) *kāla*. (3) *Aksaya kāla* (invariant)-In a closed system, there are 5 types of conservation laws of physics-4 in classical and 1 in quantum mechanics. (4) *Parātpara kāla*-At ultimate level, no distinction is perceived.
6. Dimension-It is *Chetanā* (consciousness) as it does *chayana*. It is indicated by *Viṣṇu* who has been called *Yajña-puruṣa* ⁽¹³⁾.

7. Dimension-This ⁽¹⁴⁾ is *Rṣi* which indicates number 7 in all texts of astronomy. This is link between different objects and source of knowledge. Surface of 7 dimensional world is of 6 dimensions-indicating 6 *darśana* and 6 *darśa-vāk* (scripts).

8. Dimension-This is called *Vṛtra* or *Ahi* all meaning snake and indicating ⁽¹⁵⁾ number 8. *Vṛtra* also means curling tendency (*vṛtta* = circle)-this limits matter within closed boundary. *Nāga* or *gaja* (elephant) also indicate 8. *Gaja* is also gauge (measuring scale)-measure can be done within boundaries only.

9. Dimension-*Randhra* (hole, defect), *Nanda*-words are used to indicate 9th dimension. By condensation within a boundary, there is defect in neighbourhood-that causes change or creation ⁽¹⁶⁾. The tendency to make up deficit is called *Āśanāyā* (hunger)-this creates new things. *Nanda* means fulfilment-that leads to *Ānanda* (happiness). In social hierarchy, *Nanda* (minister) is at 9th stage and king is 10th-*Nandi-grāma* =secretariat.

10. Dimension-This is *Rasa* (uniform spread) or the scalar field ⁽¹⁷⁾ assumed in modern cosmology theories. By realising that, we feel happy, so *rasa* means *ānanda* (happiness) also.

There are 10 views (*vāda*) of creation of visible universe in *Nāsadiya-sūkta* ⁽¹⁸⁾. Later on 6 branches of philosophy arose as 5 to 10 dimensions are needed for complete description for different purposes. Two groups are stated-

(1) *Āstika* (believer)-They follow *Vedas*-That means the same *Puruṣa* or conscious being is all-pervading. Thus, all are inter-linked and everything is correct in some context. That is approximated by *Anekānta* (infinite alternatives) of Jainism.

(2) *Nāstika*-They do not admit authority of *Vedas* or all pervading *Puruṣa*. *Gītā* (2/42) tells that persons pursuing a single view tell that all others are incorrect. They tell *na+anyat+asti*, in short, they are *nāstika*.

In both groups, there are 3 types. Original source is called *Parātpara*, i.e. beyond description because there is no distinction in different points. Understandable forms are 3-

(1) *Kṣara*-That is outer form or shape of bodies which is always decaying (*kṣaraṇa*).

(2) *Akṣara*-Functional identity remains the same (*akṣara*). It is not seen (*kūṭastha*=hidden).

(3) *Avyaya*-As a part of surroundings, there is no change-that is *Avyaya* (static) *puruṣa*.

Each aspect is seen in 2 ways called 2 gods of learning-(1) *Gaṇeśa* is knowledge of countables (*gaṇana* =counting), (2) *Sarasvatī* is knowledge of *rasa* (abstract) which cannot be counted. Thus, 6 branches of vedic *darśanas* are in 2 groups-

<i>Puruṣa</i>	<i>Gaṇeśa</i>	<i>Sarasvatī</i>
1. <i>Kṣara</i> (<i>pura</i> or individual)	<i>Sāṅkhya</i>	<i>Yoga</i>
2. <i>Akṣara</i> (classified)	<i>Vaiśeṣika</i>	<i>Nyāya</i>
3. <i>Avyaya</i> (<i>Śārīraka</i> =owner of <i>śarīra</i> , body) <i>Mīmāṃsā(pūrva)</i>		<i>Vedānta (uttara)</i>

The three branches claiming to be non- Vedic are also described in *Vedas*. But, they describe separate objects, without inter-link by same *Puruṣa*, so they are called non-Vedic

(1) *Chārvāka* or *Lokāyata*-This is based on *Pratyakṣa* (visible) only, excluding space as element. This is used by people (*lokas*) for basic works of farming, trade, animal husbandry-so it is *lokāyata*. It is also used in administration by *Chara* (servants) of state, so it is *Chārvāka*.

(2) *Vaināśika* or *Buddha*-Based on *Pratyakṣa* +logic (*tarka*). Logic needs *buddhi* (intellect), so it is called *Buddha*. Sum total is zero, so it is *vaināśika* (*vināśa*=destruction). It is 4-fold-*Mādhyamika* (middle path), *Vijñānāsti* (based of observation+theory), *Yogāchāra* (means of

self development), *Vaibhāsika* (admitting alternates).

(3) *Syādvāda* or *Jaina*-This sees uncertainty (*syāt* = probably), so it is *syādvāda*, also called *Anekānta* (infinite ends). Each individual (*jana*) has some speciality, knower of all alternates is *Jina* or *Arhat* (all capable) and persons in his discipline (*sāsana*) are *Jaina*.

The 3 āstika darśanas are-

(4) *Vaiśeṣika*-This explains formation of *kṣara* (visible forms which decay) by atoms of 9 types. Any atom or particle is called *Kaṇa*, so the propounder or the theory itself is called *Kaṇāda*. Large systems acquire some special (*viśesa*) aspects which was in no individual particles, so *viśesa* also is an element and this study is *Vaiśeṣika*.

(5) *Prādhānika* or *Sāṅkhya*- This describes forms of nature (*prakṛti*) whose root form is called *Pradhāna*. It enumerates elements, so it is *Sāṅkhya* (*sankhyā* = number). *Sāṅkhya* of *Kapila* has 25 elements. *Śaiva-darśana* adds 11 more elements for individual man and its covers. Its application is *Yoga*. Creation of world by this theory is *Pāñcha-rātra* (= 5 nights, creation needs calm state called *rātri*, it is from 5 *mahā-bhūtas*)-described in *purāṇas*.

(6) *Śārīraka-Śarīra* is human body, dweller within it is *Śārīraka* (*ātmā*) or *Brahma*. It explains unity in different descriptions of *Brahma*. *Veda-vyāsa* had written 564 *sūtras* to show unity-they are *Brahma-sūtra*. For 8 forms of *Prakṛti*, *Brahma-sūtra* has 8 types of explanations-(1) *Advaita* of *Śankara* (509-477 BC), (2) *Viśiṣṭa-advaita* of *Rāmānuja*, (3) *Dvaita-advaita* of *Nimbārka* (3000 BC) and *Bhāskara*, (4) *Dvaita* of *Madhvā*-all these admitted 3 sources (*prasthāna*)-*Brahma-sūtra*, 10 *upaniṣads* and *Gītā*. (5) *Suddha-advaita* of *Vallabhāchārya*-He did further corroboration (*puṣṭi*) by 4th source-*Bhāgavata-purāṇa*, so it is called *puṣṭi-mārga* also. (6) *Achintya* (unthinkable) *Beda-abheda* of *Chaitanya*. There are 2 more theories of unity-(7) *Pratyabhijñā* of *Abhinava-gupta* in *Śiva-sūtra*, (8) *Advaita* of *tantra* (*śākta*)-*sūtras* of *Agastya* and *Hayagrīva*.

Number of scripts (*darśa-vāk*) will be same as number of possible branches of *darśana*. *Darśana* gives overall outer view, script also is a presentation on surface (paper etc.). 3 dimensions of space are shown on plane surface, so there are 6 scripts as 6 faces cover a cube. Any marking is *lekhā* which is combination of *rekhā* (line) and dot (zero). Writing is *lekhana*. Letters or words formed by different signs are countable, so *lipi* (script) is called *Gaṇeśa-vidyā*.

In *darśana*, inner details are lost. Similarly, in expressed *vāk* (words or script) called *vaikhāri* some of the meaning is lost. Complete meaning is in 3 steps of *vāk*, within the cave (*guhā*) of mind. Thinking in mind is complete or pure, called *gaurī* (white) *vāk*. Its 3 steps are-invisible source (*parā*), visible thought (*pasyanti*) and formation of logical chain (*madhyamā*). Expressed words lose many of the meaning due to lack of proper words, lack of knowledge, style etc.-it is called *tama* =dark. So, the philosophy of verbal logic is called *Gau-tama*. It is used in *nyāya* (justice) where truth (white) is changed to false (dark) and vice versa by twist of words. So, it is called *Nyāya-darśana*. It was followed by *Siddhārtha*, so he was called *Gautama Buddha*.

3. Four steps of Brahma and vāk-Expanse (*vivartta*) of *Brahma* and *vāk*-both are transformation from abstract to a form ⁽²⁰⁾. Four steps (*pada*) of *Brahma* are-(1) *Parātpara* (abstract source), (2) *Avyaya* or *Puruṣottama*, (3) *Akṣara* or *Kūṭastha*, (4) *Kṣara* or visible world. *Paratpara* is without parts, other 3 have 5 parts each. So, expressed form of *Brahma* is called *Ṣoḍaśi Puruṣa*. Each part (*kalā*) has 4 sub-parts like 4 *vedas*, so there are a total of 64 *kalās*. *Māṇḍūkya upaniṣad* has shown correspondence of 4 steps of *Brahma* with 4 parts of AUM.

4 steps of Vedas-Veda of *Parātpara* or *Svayambhuva Brahma* is called its breath ⁽²¹⁾. The whole universe has no external motion-nothing is external for that. Its internal cycle of change is its breath. Cyclic actions at any level has been called breath or *Darśa-pūrṇa-māsa*. *Māsa* = measured, it is month measured by phase cycle of moon by motion of moon relative to sun. *Darśa* =start of visibility or new moon, *pūrṇa* =full moon. Lunar month is cycle from *darśa* to *pūrṇa* and back. Cycle of all systems are measures of time-*janya-kāla*.

Human breath	Cycle of yajña	Veda as breath of Brahma
<i>Kumbhaka</i> (storing in)	<i>Pūrṇamāsa</i> (full moon)	<i>Rk</i> (all forms)
<i>Rechaka</i> (breath out)	Motion to <i>darśa</i>	<i>Yajur</i> (<i>Kṛṣṇa</i>)-to darkness.
<i>Bahir-kumbhaka</i> (keeping out)	<i>Amāvāsyā</i> (<i>darśa</i>)	<i>Sāma</i> (invisible field)
<i>Pūraka</i> (breath in)	Motion to <i>pūrnamāsa</i>	<i>Yajur</i> (<i>śukla</i>)-to visibility.

Atharva veda is total system and base of action.

Veda of *Parameṣṭhī-maṇḍala* (galaxy) is called *Gāyatrī-mātrika*. It is largest object which has a measure within a boundary. Measuring of worlds is by *gāyatrī*- a meter of 24 letters. Starting from man-earth, solar sphere, galaxy are successively $2^{24} = 10^7$ times bigger.

Yajña between earth and solar system is called *Sāvitrī*, sun is *Savitā* = creator, i.e. source of radiation. Its part received on earth and used for sustaining life is *gāyatrī*. Combined effect of all suns is maintaining galaxy which is final *yajña*. *Yajña* cycles are *Rāsa*, which have created the world. These are -(1) Rotation of earth around its axis (daily cycle of *yajña*), (2) Rotation of moon around earth (monthly *yajña*), (3) Rotation of earth around sun (annual *yajña*, *samvatsara*), and (4) Rotation of sun around *Parameṣṭhī* center (*Kṛṣṇa*, may be black hole).

Veda of earth is *Śabda-veda*, which is a combination of letters (*varṇa*) and syllables (*akṣaras*) and written or spoken as per *akṣaras*.

Human Vāk	Brahma Vāk
1. <i>Parā</i> (abstract source in mind)	1. <i>Satyā</i> vāk-Abstract of <i>Svayambhuva</i> (Universe)
2. <i>Paśyantī</i> -Visible thought	2. <i>Āmbhrṇī</i> -waves of galaxy (<i>parameṣṭhī</i>) <i>Subrahmaṇyā</i> -star patterns, shapes.
3. <i>Madhyamā</i> -articulation in words.	3. <i>Bṛhatī-vāk</i> (field) of sun, radiation is <i>Indra</i> .
4. <i>Vaikhari</i> -Spoken by contact of air	4. <i>Anuṣṭup-vāk</i> of earth. (or written on paper by touch)

Vāk of both types have first 3 steps in *guhā* (cave). For man, it is head cavity. For *Brahma*, it is *Parama-guhā* of 1/2 of 10^{17} *yojana* (*yojana* = half degree on equator) circumference.

There are 4 steps of expressed *Vāk* also ⁽²²⁾-

- (a) *Prāṇa*-Energy of body rises from navel as air . It has *prāṇa* (energy) for creating sound.
- (b) *Svara*-Air attains stage of *svara* (sound) by entering chest, oesophagus and head.
- (c) *Varna*-On entering mouth, *svara* is divided in 5 ways-1. *Svara* (sound), 2. *Kāla* (time), 3. *Sparśa* (place of contact), 4. *Prayatna* (effort), 5. *Nirgama*-path of going out.
- (d) *Dhvani* (Note)-Musical effect of sound is classified in 7 *svaras* (notes) of music-*sa, re, ga, ma, pa, dha, ni*.

Spoken or written word has 4 steps each divided into 4, making 16 *kalā* (parts) as of *Brahma*.
1. *Varṇa* (letter)-This is a point of sound and of 4 types-1. *Asprṣṭa* (not touched-with a place of mouth), 2. *Iṣṭa sprṣṭa*-slight touch, 3. *Sprṣṭa*, or *mṛdu-sprṣṭa*-mild touch, 4. *Duh-sprṣṭa* or *Arddha-sprṣṭa*-difficult or half touch.

2. *Akṣara*-It is one continuous sound (syllable). It must contain a *svara* (vowel)-*Varṇa* may be points of vowel or consonant. *Svara* has 2 points of *prāṇa*, and 1 point of *varṇa*. First dot of *prāṇa* can be linked to 4 consonant *varṇas* (4 points) and later *prāṇa* point can attach 3 consonants with it. Thus, 1 *akṣara* can have maximum of 9 points of *prāṇa*-4 consonants + 1 vowel (2 points of *prāṇa*) + 3 consonants (1 point *prāṇa* each) = 9

This is 1 *pāda* (quarter) of *Bṛhatī chhanda* (9 *akṣaras*). Count of *varṇas* can be only 8, which is a *pāda* of *Anuṣṭup chhanda*⁽²³⁾. *Akṣaras* are of 4 types-1. *Mukta* (detached), 2. *Pūrvasambandhita* (linked with previous), 3. *Uttara-sambaddha* (linked with later part), 4. *Ubhaya sambaddha* (both sides).

3. *Pada* (word)-This is related to an object or its meaning and of 4 types⁽²⁴⁾-1. *Nāma* (name)-symbol of each object. 2. *Ākhyāta* (defined or described)-related to action. 3. *Upasarga* (prefix)-change in meaning of word. 4. *Nipāta* (usage or tradition).

4. *Vākyā* (sentence)-This states an event by combining the 3 above. It is of 4 types⁽²⁵⁾-
1. *Mita* (limited, by a *chhanda* or its *pāda*), Or, *Rk* (*satya*-fact), of 2 types. *Gāthā* or *śloka* (verses) and *Kumbyā* or prose-free sentence. 2. *Yaju*-describes action. 2 types are-*Nigada* is explanation and *Vṛthā* is meaningless or joke. 3. *Geya*-songs. 4. *Satya* (existence) or *Anṛta* (absence) are relative terms.

4. Measures of Brahma and Vāk-Both are called *Chhanda*. *Chhanda* is a measure of *Vāk* which means sound or its medium which is space. In English also, meter is a measure of syllables in a poem or measure of space etc. *Chhanda* means motion also-that is related to time, speed is space covered in unit time. Here, measures of space only are stated.

Linear measure of space is in exponential units⁽²⁶⁾ called *ahargāṇa*. On earth, *ahargāṇa* means day-count for calculation of planetary position and making a calendar. Its opposite is *aho-rātra* (day +night) i.e. half part. Its short form *Horā* means half part of a *Rāśi* (zodiac sign of 30°). Thus, *Ahar* should mean double, and *ahargāṇa* means repeated doubling. In space, earth is the measuring rod, its radius is 3 units, as there are 3 zones within earth itself-2 inner zones are images (involutions) of 2 bigger earths-solar system and galaxy. Unit 4 has double of earth radius, 5 *ahargāṇa* = 2×2 radius. In general, radius of n *ahargāṇa* = $R \times 2^{(n-3)}$, where R= earth radius. *Ahar* is indicated as measure in *Rgveda*. *Bṛhadāraṇyaka upaniṣad* (3/3/2) tells that each *Ahar*-zone is double of the previous *Ahar* zone.

In *Rathantara sāma* of earth, 3 divisions are at 9, 15, 21 *ahargāṇa*⁽²⁷⁾.

Radius of 9th *ahargāṇa* is $R \times 2^{9-3} = 64 R$. Moon is at 61R in this zone, this is *Agni* zone nearest to earth.

15th *ahargāṇa*= 2^{12} r = up to 30% distance till venus orbit=*Bhuvar loka*. *Vāyu* (air) zone-motion can be affected by earth.

Within this region is 17th *ahargāṇa*= 2^{14} r=just crosses sun which is sustaining life, i.e. *Prajāpati*, so 17 is called *Prajāpati*. From earth surface, it is 15th, so earth day and *kalpa* (day of *Brahmā*) are divided into 15 *muhūrtta* or *manvantara*.

21st *ahargāṇa* = 2^{18} r. It just crosses saturn orbit which is called ‘*ratha*’ of sun or more properly wheel of the *ratha*, so it is ‘*rathantara sāma*’ (*sāma* =field of influence) Up to this region, rays of sun are sustaining life, so this is center of ‘*nāchiketa*’ svarga extending to 4 *ahargāṇa* on either side of 17th (sun) , i.e. 17th to 25th. Zone upto 21 is *Ravi* (*rava*=vibration) or *Āditya* (*Ādi* or start of creation). This is from 100 sun-diameters to 1000 units⁽²⁸⁾. Life and

yajña on earth depends on this, so *veda* is stated to be born from *Agni*, *vāyu*, *ravi* ⁽²⁹⁾.

Second *Sāma* is *Vairūpa* upto 33 *ahargāṇa*. From center to 33 *ahargāṇa*, zone of each *ahargāṇa* is a *loka* and its energy level (*prāṇa*) is a *devatā*. Thus, there are 33 *devatā*-⁽³¹⁾ = 8 *Agni* + 11 *Rudra* + 12 *Āditya* + *Dyu* (sky, 2 zones at junstions).

Sun rays (*Indra*) penetrate upto this zone, so this is *dyu* (sky) of sun- 10^7 times diameter of sun (more accuratey 1.57×10^7)-so it is calle *vajra* (thunder-bolt) of *Indra* ⁽³²⁾. In inner world of human body, backbone of 33 joints is *Vajra* of *Indra*. Solid planets are *dadhi* (curd), so this *vajra* is made from backbone of *Dadhīchi*- a sage who perceived and named the regions or actually made weapon of thunder-bolt. Zones of *Vairūpa Sāma* are of 11, 22, 33 *ahargāṇa*, which are *pādas* of *Trīṣṭup chhanda*. Since it has resonance with backbone, this meter *Indravajrā* = 11×4) is used for verses of prayer (chapters 11 of *Gītā* and *Durgā-saptaśatī*). Adding this to *Rathantara sāma*, we get 6 *stomas* (volume of zones with these radii)-9, 15, 17, 21, 27, 33. These 6 *vāk* are measure of solar field-so it is called *Vaṣṭkāra* ⁽³³⁾.

Third *Sāma* of earth is *Śakvara-sāma*. This is galaxy equal to 10^{14} times size of earth, so it is called *Śakvara* as *Śakvarī chhanda* has 14 letters in each *pāda*. It is also called *Jāgata-sāma* as galaxy is largest structure in *jagat* (world). In *ahargāṇa* units, it is 48 (more correctly 49.3), so *chhanda* of 48 letters is called *Jagatī*. *Śakvarī* means night, stars of galaxy are seen in night, or it is dark beyond galaxy, so the *sāma* is *Śakvara*. Next bigger *chhanda* after *Jagatī* is *Śakvarī*. It has 3 zones of 24 (*gāyatrī*), 44 (*triṣṭup*) and 48 (*Jagatī*) *ahargāṇas*. *Māheśvara sūtra* (code for sanskrit gammer) has 43 letters, so *maha-loka* is upto 43 *ahargāṇa*-that is within scope of *Trīṣṭup* (44) which can have 2 more or less letters. This is a zone of 1500 light years diameter which is width of spiral arm of galaxy near sun. Similarly, size of galaxy is 49 *ahargāṇas*, so there are 49 letters in *Deva-nāgarī* script. Zone of each of 49 *ahargāṇas* is a *marut*. Thus, there are 49 *maruts*. This is *Bhūmi* (earth) of galaxy, so its *Puruṣa* or creative form will be 10 times bigger (*Puruṣa-sūkta*, 1). This is *Kūrma* ⁽³⁵⁾ as it does work (*kurmah* =we do). This is neutrino corona of galaxy called eternal *Go-loka* (zone of radiation). Within this, galaxy is formed which has been called Great child ⁽³⁶⁾. This has 3 *ahargāṇas* more (3.2 exactly). *Puruṣa* has been called *Kṣetrajña* in *Gītā*, chapter 13. Correspondngly, there are 52 *vibhūti* (achievements) in *Yoga-sūtra* and 52 *pīthas* (bases) of *Śakti*. For *Kṣetrajña* , we add *kṣa*, *tra*, *jñā*-3 letters at end of *deva-nāgarī* script-that is called *Siddha-māṭrkā* (script of achievers). In some forms, only *kṣa* is added-making 50 letters at 50 petals of 6 *chakras* in human body. This is letter X in Roman script, As *kṣa* is in *Ājñā chakra* (center of brain), it is cross shaped as intersection of vertical *suṣumnā* nerve (backbone) and horizontal *Ājñā chakra*. *Kṣetrajña* has beeecome exrtra letter symbolized as X.

Brāhmī script has 64 letters ⁽³⁷⁾ and 67 letters if *Kṣetrajña* is added. This is *Tapah loka* of *Brahmā* of $2^{64}R = 10$ billion light years radius. This is called visible universe as light (or heat = *tapa*) from this zone can theoretically reach us and contribute to creation. Day-night of *Brahmā* is of 8.64 billion years.This figure in light years is 63.5 *ahargāṇas*. So, there are 63 or 64 letters in *Brāhmī* script.

There is anoter division in thousands (*sahasra*). This can be called *Śeṣa* (remainder) or *Nāga* (curl, snake). The spiral arm of galaxy is *Śeṣa-nāga* as it is beyond solar structure and has spiral shape. The sphere of width or arm around sun has 1000 suns which are heads of this snake. Earth is less than a dot on one of the heads. Three thosands have been called *pāda*

(foot, base), *akṣa* (axis, eye), *śīrṣa* (head, source). Alternate name are *Veda*, *loka*, *vāk*⁽³⁸⁾. Starting from earth, *Ānanda* increases by 100 in each *ahargana* zone⁽³⁹⁾, called *lokas*. There is further sub-division of remainder *Ānanda* (*śesa*). The sphere around earth of 1000 times size, is *pāda-sahasra.*, or *Veda-sāhasra* (*sāma*). In *ahargana* units, it is 2^{10} , i.e. $10+3 = 13$. So, *sāma* has 1000 branches in space, but 13 only in text⁽⁴⁰⁾. *Sāma* within earth or body is *Jaimini* (*jāmi* = to eat), outer *sāma* (field) is *Kauthumī* (*kutha* = to spit).

5. History of scripts-*Svāyambhuva Manu* (31000 BC) was *Brahmā*, who gave name to all objects as per their works and created systems as per words of vedas⁽⁴¹⁾. Chinese encyclopaedia -*Fa-van-shu-Lin* (668 AD) tells that a great scholar *Brahmā* (*Fan*) had invented script. J. Princep had read *Brāhmī* script of *Ashoka* period in 1838 AD. He has written in Journal of British Asiatic Society, part 7, 1838 at page 275-Most ancient script of Greece is merely a re-arrangement of sanskrit letters. As per *Nārada-smṛti* and *Bṛhaspati*⁽⁴²⁾. *Brahmā* had invented script. A *sanskrit* inscription has been found in Dyokha seals found in Telo (Lagash) of Iraq in pre-Sargon era layers (3000-2800 BC). This is kept in Paris museum. Similar letters have been found on seals of *Sarasvatī-Sindhu* excavations also. A seal of Babylon of 6th centry BC found in *Rasam* is kept in British museum (47361/1081) which has a *sanskrit* inscription in *Māheśvarī* script.

Two traditions of grammer have been stated-

1. *Brahmā*⁽⁴³⁾-*Bṛhaspati-Indra-Bharadvāja* (6300 BC)-*Atri-Brāhmaṇa* (vedic texts).
2. *Maheśvara* (4th part of *satya-yuga*)-*Bṛhaspati* (15,000 BC)-*Indra* (12,500 BC)⁽⁴⁴⁾

Foundation of *Pāṇini* grammer is 14 *sūtras* of *Maheśvara* having 43 letters. This is also root of *Tantra* as well as code for grammer *sūtras*. Thus, grammer of *Maheśvara* may be for link between grammer and *Tantra*, i.e. scientific or technical terms. *Brahmā* had named all objects and *Bṛhaspati* taught his grammer explaining each word separately. That is still followed in Chinese script where separate signs of each words exist. So, it has thousands of letters. This is too big to understand, so on quest of *Devas*, *Indra* separated sound parts of words into letters or root and suffixes. This was with help of *Vāyu*, an authority on sounds. This was based on sound elements of *Vāk*, so it was called *Vyākaraṇa*⁽⁴⁶⁾.

Script is called garnald of letters (*varṇa-mālā*). This is countable form of sound, so pioneers of script have been called *Gaṇapati* (*gaṇana* =counting) in vedas. First pioneer *Gaṇapati* was *Brahmaṇaspati* (*Svāyambhuva Brahman*) who formed⁽⁴⁷⁾ *Māheśvarī* script by *ardhendu* (crescent moon) and dot at top (*vindu*). He has been described as a god in *Rgveda* (2/23-26, 10/155 etc). Second *Gaṇapati* inserted vertical line (I) in all letters⁽⁴⁸⁾ which is form of (A) sound existing in each letter. Third important *Gaṇapati* was *Nāgendra* or *Girā-Guru Gaṇapati Nāga*, who was *Nāga* king of *Padmāvatī* (*Pahava* of Madhya Pradesh) contemporary to *Chandragupta-1* of *Gupta* period (327-320 BC). He introduced *śiro-rekhā* (horizontal line at top) in each letter⁽⁴⁹⁾ except AUM. By this line at top, there was distinct forms of each letter and their sizes became similar. Thereafter, *Brāhmī* of *Ashoka* period and *Jaina Bauddha* varieties of *Brāhmī* faded away.

Jaina sūtras and *Bauddha* text *Lalita-Vistara* name 18 and 64 scripts used in India. Many of these are foreign-1. *Brāhmī*, 2. *Kharoṣṭhī* (from right to left, from *Sindhu* river till Egypt), 3. *Yavanānī* (Greek script), 4. *Sāṅkhya* (for numbers or mathematics-25 letters for 25 elements of *Sāṅkhya*), 5. *Māheśvarī*, 6. *Drāviḍī*, 7. *Dakśinī*, 8. *China*, 9. *Hūṇa*, 10. *Uttara Kuru*, 11.

Asura lipi (8 -11 are foreign), 12. *Sāgara* (Tamil ?-formed by *Kārttikeya* for navy in Pacific ocean), 13. *Kinnara*, 14. *Garuda*, 15. *Antarikṣa-deva*, 16. *Vāyu Maru*, 17. *Gandharva*, 18. *Paiśāchaī*, 19. *Yakṣa* (12-19 in borders or by traders).

In very ancient era, there was contact with Americas as evident from exact references in *Vālmīki Rāmāyaṇa* and *Sūrya-siddhānta*. After *Mahābhārata* also, links with Asia, Australia and Africa remained. Thus, at least the traders and travellers knew the scripts and languages of Africa, China. There were separate scripts or symbols for mathematics, science and *tantra* (engineering) as it is now. In ancient Egypt, planet names were codes of numbers which indicated their distance from earth in *dhāma-yojanas* (half degree circumference=55.5 Kms.). That code was based on *Devanāgarī script* (*sanskrit*) which was not used there. Moon is still called *Mahatāb* (5863) in Arabic in that code.

Prior to British rule, there was no communication problem in parts of India and south Asia. People of all classes freely travelled and read literature of different regions. Present form of letters in *Devanāgarī script* was adopted after its use in *Sāyaṇa bhāṣya* in 14th century in beginnig of *Vijayanagara* empire in *Karnataka*. That spread to the whole of India. There was no local govt then in north India to standardize a script. Moghuls used Persian or Urdu for Govt work. While Moghuls remained indifferent to the state of literature or script, British rule was vehement in uprooting Indian culture. Different fonts were formed for scripts of each state, so that all states were cut off from each other and from basic texts of sanskrit.

One important example is historic similarity of *Oriya* and *Punjabi* (*Gurumukhī*) scripts at east and west ends of present *Hindi* region. One of the 5 original members of *Khalasa* was from Puri district of Orissa. In addition, Orissa was the only place where original Indian traditions survived in time of *Guru Nanak*. So, the *Gurumukhī* script itself was based on the script used in Orissa. Dr. *Satyanarayan Rajguru* in his book on Orissa Temple Inscriptions (vol 1) has given photos of scripts used in temples of Konark and Puri in 12th century. Form of letters in present *Gurumukhī* is same as those letters. There is no word in Indian languages which has different meaning in other language. Only verb forms are different . Script is same, forms of letters also are almost similar, even in Tamil and Hindi.

6. Scripts classified by number of letters-*Brahma* and *vāk* (words) have same extent or spread ⁽⁵⁰⁾. This is in 4 senses-

- (1) *Pada* (quarter parts) of *Brahma* and *Vāk* are similar.
- (2) Their *chhanda* i.e. measures are same. These two have been shown in para 3.
- (3) *Chhanda* means motion or speed also which is based on time. Correspondence of *Brahma* time with human time is at end of note 21. Human life span is of *Bṛhatī* thousand (36,000) days. Its *ādhyātmika* (inner) meaning is given in *Tantraloka* (by *Abhinava Gupta* of Kashmir, *Śaivism* text) *āhnika* (part) 6.
- (4) Now it will be shown that number of letters in a script are as per different dimensions in which *Brahma* is explained.

Brahma is the whole universe. For mechanical description of physics, it needs 5 dimensions -i.e. 5 basic units of measurement are needed as proved by Giorgi in 1911. These units are of length, mass, time, electric charge and permittivity of free space. These are indicated by 5 *Mā* (=measure) *chhandas-mā*, *pramā*, *pratimā*, *upamā*, *samā* (*Rk Prātiśākhya*-grammer of *Rik veda*). For convenience, 2 more basic units are added in SI system-radian (plane angle) and

steradian (space angle)-these have been called *asrīvi chhanda* for directions in *Maitrāyanī samhitā* (2/13/14). Derived units are combination of these 5 units called *Vayah* (weaving, bird) *chhandas* described in *vajasaneyī yajurveda*-14/9-10 (19 *vayah chhandas*) and 15/4-5 (40 *vayah chhandas*). These have been explained at several places in *Śatapath Brāhmaṇa* (8/5/2/6, 6/1/2/2, 10/2/1/5, etc), *Aitareya Brāhmaṇa* (2/15) etc. Individual meanings need detailed study.

It may be noted that Special or General theory of Relativity (1905, 1912) by Einstein did not take mass as a dimension, it was taken as curvature of 4 dimensional space-time. Till 1930, dimensions of galaxy were not clear whose reliable measurement was in 1950 only. Accurate measurements of galaxy are at several places in vedic literature in 6 different units. Nature of 10 dimensions has beein indicated in para 2 at pages 2,3.

Mechanical world needs 5 dimensions. Different aspects of *chetanā* (which can do *chayana* = ordering) need 6 to 10 dimensions. Thus, there are 6 types of *darśa-vāk* (script) corresponding to dimensions from 5 to 10. Dimension is linear measure, script is on a plane surface like paper, so elements of script (or of *darśana* =philosophy) will be square of dimension numbers. The scripts for dimensions 5 to 8 will have letters 5^2 , 6^2 , 7^2 , 8^2 . The *Śakti-mātrikā* (script fot *tantra*) of 9^2 letters is included in script of 7^2 letters only ⁽⁵¹⁾. Creation is by boundary and defect (8 and 9 dimensions), so *Veda* is stated in script of $(8+9)^2$ letters. Tenth dimension is *Rasa* (uniform matter) whose spread is *Sāma* (fileld of influence) having 1000 branches. For this dimension, script has thousand(s) letters used in China and Japan. All these scripts are divisions of undivided *Gaurī-vāk* ⁽⁵²⁾.

(A) *Gāyatrī-vāk*-24 letters of *gāyatrī chhanda* are equivalent to 24 elements of *Sāṅkhya* philosophy. Each *viśva* (enclosed world system) is called *Bhū* as *Bha* is 24th letter in consonants of *Devanāgarī* starting with *Ka*. 25th element is *Aum* (ॐ) or 25th letter *Ma*. Combining this, *Viśva* is *Bhūmi* (enclosed within boundary) or *Bhūmā* (its infinite field of influence). The script parallel to *Sāṅkhya* is useful for *jyotiṣa* or mathematics as they use *sankhyā* (numbers). We use a matrix called *Avakahadā* to name quarters parts of 27 *nakśatras* in *jyotiṣa*. It has 20 consonants and 5 vowels-A, I, U, E, O (long and short both forms are counted as one). It is same as 5 vowels in Roman script based on *Sāṅkhya*. Each consonant combines with 5 vowels to make 100 letters- so it is called *Śatapada-chakra* (100 feet matrix) also. French form of Roman script has 25 letters. In English, there is an extra letter X - which is first letter *kśa* of *Kśetrajña* (knower of field called *kśetra* indicated by letters-*Gitā*, chapter 13). *Bhauma Atri* was the first to calculate solar eclipse in astronomy (*Rgveda*, 1/51, 112) and he is recognised as one of the 18 *āchāryas* (pioneers) of astronomy. *Sāṅkhya Atri* was in his tradition who used this script of 25 (or 26) letters. His descendants went to north west from India, so it is still used in west Europe in that direction ⁽⁵³⁾.

25 elements of *Sāṅkhya* are in 2 ways. 5 *tanmātrā* (*mā chhandas*) of 5 measurable dimensions combine with each other in $5 \times 5 = 25$ ways called *Pañchikarāṇa* (*prapañcha* = combinations of 5s). Another view starts with indivisible *Puruṣa* (the Great Conscious Being). Its creative form is caled *Prakṛti* (sorce creator, nature) which acquires different forms by 3 *guṇas*.

Guṇas are viewed in 2 ways. One meaning is rotation which is in 3 directions of space. In this way, all are similar. Their combination can be of $2^3 = 8$ types. That is called *Prakṛti-vikṛti*

(creator-created). Original creator is *Mūla* (root) or *Pradhāna* (main). Other 7 are creator-created both. It is further classified by *gunas* of separate qualities. *Sattva guna* is potential source. *Raja guna* is active form. *Tama guna* is inactive or dormant state. There is no creation by *Tama guna*. So, 8 *Prakṛti-vikṛti* create $8 \times 2 = 16$ forms which are *vikṛti* (created, transformed) only. Thus, there are 24 varieties of *Prakṛti* and 1 *Puruṣa* – total of 25 elements.

(B) Brhatī-Vāk-The mechanical world described by *sāṅkhya* gradually disintegrates. That is expressed by various equivalent statements of second law of thermodynamics. One is-a natural system always moves from order to disorder. *Sāṅkhya* just names *Puruṣa*, it does not describe its attributes. For creating or maintaining order, a sixth dimension of consciousness is needed. It is called *Chetanā* as it does *chayana* (selection, ordering). So, this philosophy or equivalent script will have $6 \times 6 = 36$ letters. It has $6^2 - 5^2 = 11$ extra elements-called *Rudra*. As the world is 10 dimensional, number of particles in each sphere of world is 10^{11} . This number is called *kharva* which means particle form or powder. Countable world is *Gaṇeśa* (*gaṇana* = to count), who is also called *kharva*. Universal all pervading consciousness has 2 forms-*Aham* (I, self)-Observer, *Śiva*. Self as a world is whole world described by letters from a to h in sanskrit alphabet, so it is *A+ham*. That is pointwise consciousness. Universal form is *Ah+M=Om*, ऽ)-indicator of *Brahma*.

Idam=observed or created world, subject of consciousness, *Śakti*.

Combination of these two elements gives $2 \times 2 = 4$ forms of pure consciousness-*Śiva*, *Śakti*, *Sadāśiva* (combination of *Aham* + *Idam*), *Īśvara* (*Aham*, controller as in *Gītā* 18/61). For 7 *lokas*, there are 7 elements of *Māyā* (measure, boundary or separation). Universal *Puruṣa* of *sāṅkhya* is individual here, enclosed within a single body called *pura*. His consciousness is not infinite and limited within a boundary called *Māyā*. For 5 dimensions of mechanical world, *māyā* has 5 layers-called *Kañchuka*.

Actual scripts under this class are ⁽⁵⁴⁾-

Maya script-In *Avakahadā-chakra* of *jyotiṣa*, there are 4 squares, each having 5 consonants combining with 5 vowels each-A,I, U, E, O-forming 5x5 matrix. 4 squares have letters (A, va, ka, ha, ḍa), (ma, ṭa, pa, ra, ta), (na, ya, bha, ja, kha), (ga, śa, da, cha, la). These will give only $5 \times 5 \times 4 = 100$ letters, but 27 constellations have $27 \times 4 = 108$ quarters. So, at the center of each square, 3 letters each are added, making 4 letters in each square-(ku, gha, ṇa, chha), (pu, ṣa, ṇa, tha), (bhu, dhha, phha, ḍa), (du, tha, jha, ṇa). This is called *Maya* script as in 9.223 BC, *Maya Asura* had revised *Sūrya-siddhānta* of *Vivasvān* written in 13, 902 BC.

Gurumukhī-It was started by 5th Sikh *Guru Arjunadevaji*, so it is called *Gurumukhī*, i.e. started by *Guru*. It has same sequence of basic vowels and consonants as in *Deva-nāgarī*, but has only 35 letters. According to *Linga-purāṇa* ⁽⁵⁴⁾, 35 letters are used for harmony and *yajñā* (steady cycle of production).

Hibrew-Arabic-Letters were originally arranged in order of numbers of unity and tens-

1	2	3	4	5	6	7	8	9
A	B	Z(C)	D	H	V	J	Hu	Tti
10	20	30	40	50	60	70	80	90
K	L	M	N	S	Y	F	Sh	Ph

Some sequence of this script continues in Roman script-a, b, c, d, then k, l, m, n. Its use is indicated in India in period of *Siddhārtha Buddha* (1887-1807 BC). As per Buddhist text-

Majjhima-Nikāya (2/4/5), both the *gurus* initiating *Buddha* were called *Kalāma-Bharanḍu* *Kalāma* (*Bheruṇḍa* was incarnation of *Śiva* in time of *Prahļāda*, later on this place was named after later disciple *Gorakhanātha*) and *Ārāda* (of *Ārā* in Bihar) *Kalāma*. Common men know equal to first 3 letters abc-elementary knowledge is called knowing abc. So, equals were called *Abus* (a,b,c) in *Baudha* schools. Less than equal is *Abe* (derogatory) or *Ab-* prefix of English. Letters indicating numbers in tens indicate persons of higher knowledge-*Kalāma* (*guru*) or *Kalama* (pen), *Kalamā* (start of Koran). Now all these words are used only in Arabic.

(c) Māheśvarī or Devanāgarī-This is equivalent to *Jagatī Chhanda* of 12×4 letters -each *chhanda* can have upto 2 less or 2 more letters. Parallel to 7th dimension or 7 *lokas*, it has 7^2 letters. This is same as number of *marut* (layers of air-or motion of rare matter in galactic spac.). These have been called divisions in womb of *Diti*. *Diti* is divisions of space, *Aditi* is continuity. Divisions of *marut* was by *Indra* or radiation levels. *Vāyu* and other *purāṇas* describe 7×7 divisions of *marut* and their names. Parallel script was created by deva king *Indra* with help of *Vāyu* who was an authoritiy on sounds. Being used in towns (*nagara*) of *Devas*, it was called *Devanāgarī*. *Indra* is *lokapāla* (ruler) of east (part of India) and *Marut* (i.e. *Vāyu*) of north west part. Till today, it is used from east India to northwest India. Another feature is that solar system has 33 zones upto 33 *ahargāṇas* in exponential scale. *Prāṇa* (energy) of each zone is one *Deva*. The consonants from **k** to **h** in this script are symbols of these 33 *devas*⁽³⁴⁾. 16 vowels are symbols of other 16 *maruts*. Total of 49 letters correspond to 49 *ahargāṇa* measures of *Parameśṭhi* (galaxy). For grammer purpose, its letters were arranged by *Maheśvara* (*Śiva*) in human form. So, it can be called *Māheśvarī* script also. Counting long and short vowels as same, its 43 letters are arranged in 14 *sūtras* of *Maheśvara*. The ordering of the letters is also parallel to stages of creation of world, so it is basis of *Tantra* also. According to *Mahābhāṣya* (great commentary) of *Patañjali*, it has 8 additional letters-*Anusvāra* or *vindu* (half m, single dot), *visarga* (half h, double dots), two internal h (bounded by letters on both sides), 4 *yama* (nasal sounds). Thus, this script has 4^2 vowels (including *vindu*, *visarga*), *sparśa* (contact) letters in 5×5 matrix, and 3^2 *ataḥstha* (internal sound) letters- 4 *antahstha*, 4 *ūṣma* (warm) and one *L* with difficult contact.

(d) Brāhmī-This is parallel to 8th dimensions which closes matter in curved boundaries called *Nāga*. It is gross form and limits of boundary can be measured, so it is *Gaja* =elephant or measuring rod. Parallel to it, there are 8×8 *kalā* (partitions) and 64 letters in *Brāhmī* script. Its other significance is that, taking earth as unit rod, size of visible world is 2^{64} . *Pāṇini śikṣā* tells 63 or 64 letters in this script-22 vowels including *pluta* (3 measures of sound) forms of *a*, *i*, *u*, *ṛ*, *ai*, *au*, 33 consonants and 8 internal letters as in *Devanāgarī*, and 8 extra letters stated by *Patañjali* in above para called *ayogavāha* (unclassified). If we count *pluta* form of *ṛ* also, then there are 64 letters. *Brāhmī* exists as *Telugu* and *Kannada* in south India-both have vowels of 1, 2, 3 measures. That may be because the last *Brahmā Apāntaratamā* lived on banks of *Gautamī* (*Godāvari*) and had gone to *Hariṇa dvīpa* (Malgassy) for *Tapa* (*Brahma-viavartta purāṇa* 1/8/27, 1/12/4, 1/22/17, *Taittirīya Āraṇyaka* 8/9-*Sāyana bhāṣya*, *Gargasamhitā* 6/14/8, 7/40/35, 7/42/23).

Tamil-This was an artificial language created by *Kārttikeya*. It was a short form of *Brāhmī*, to be used for war purpose, as he was commander-in-chief of *devas*. In similar way, *Urdu* was created as a short form of Persian script by muslim kings who caputured Delhi in 1192 AD.

This used the sentence form of Hindi with mixture of Persian/Arabic words. Similarly, *Brāhmī* was shortened by mixing first 4 letters of each of 5 groups of consonants. There is a single sign *Ka* for all 4 letters *Ka*, *Kha*, *Ga*, and *Gha*. Similarly it is in each of groups. Nasal letters at end of each group are indicated by adding a common nasal sound. *Brahma* is visible as a collection of separate entities. Being countable, it is called *Gaṇeśa*. Its opposite is abstract non-countable, called *Sarasvatī*, which is *rāsa-vatī*, i.e. with *rāsa*= essence or thought. For ancient texts of Tamil, *Gāthā* script is used which is complete as *Brāhmī*.

By merging separate points of *Brahma* by *sveda* (sweating, water), we perceive ⁽⁵⁶⁾ a pattern, that is called *Su-brahma*, i.e. *Brahma* seen as continuous pattern. Thus, *Kārttikeya* himself is called *Subrahmaṇya* and Tamil is *Subrahmaṇyā vāk*. In para (4), this has been stated as *vāk* of galaxy in pattern form. Without pattern, that is *Āmbhṛṇī*. Time of *Kārttikeya* is indicated in *Mahābhārata*, *Vana parva* (230/8-12), that north pole had shifted away from *Abhijit* (Vega) star). That started in 16,000 BC. Year started in revised calendar of *Kārttikeya* from entry of sun in *Dhanīṣṭhā* (Delphini). Then, year started with *Varṣā* (rains), so it was called *Varṣa*. That is incident of 15,800 BC. *Kārttikeya* had first destroyed *Krauñcha Dvīpa* (north America in shape of flying bird-Heron) by *Śakti* (missile) and then captured it. In the process, his navy called *Mayūra* (peacock) captured Pacific ocean. Its effect is seen till today in that islands of Pacific separated by 15,000 kms of ocean have the same *Maori* (*Mayūri*) language and culture. In 1831, when James Cook signed agreement with Maori king of New Zealand, he was surprised that a *Maori* of Hawaii islands 15,000 kms away knew the language and signed as interpreter. Another evidence is that all inscriptions of Mexico can be read in current form of *Kannada* script (descendant of *Brāhmī*) as shown by Dr. S. Venogopalacharya in his books-(1) World-wide Hindu culture and *Vaishnava Bhakti*, and (2) Derivation of so called Modern Scientific Discoveries from The *Vedic Hindu Sastras*-both published by himself from 1471-D, Jains Colony, Ashoka Nagar, Mandya-571401 (Karnataka), India.

Capture of *Krauñcha dvīpa* by *Kārttikeya* in 15,800 BC is indicated by all Greek writers from Herodotus to time of Alexander (326 BC) that India was self sufficient in all matters and never captured any other country since last 15,000 years (i.e. from 15,500 BC).

(e) *Vijñāna-vāk* (letters for science). In modern science, we are using different symbols for mathematics and use Greek letters in addition. Classification of letters for unified science of *Vedas* is more systematic and scientific. This script is also called *Chhandobhyastā* (practiced in *chandas* = *vedas*) or *Pathyā-svasti* (path of harmony). *Vijñāna* (science) means classified knowledge or *Aparā* (other) *vidyā*, i.e. *Avidyā*. Vedic script uses all possible combinations of sound, so it is called *vijñāna-vāk*. It has 288 letters classified and 1 unclassified letter Om (ॐ), making a total of $289 = (8+9)^2$ for 8th and 9th dimensions combined. It is based on these considerations-

(i) One syllabus has 9 points of *prāṇa*, but 8 points of letters ^(21, 23). Vowel in middle is 1 letter, but 2 points of *prāṇa*. These are number of letters in a quarter of *Bṛhatī* and *Anuṣṭup chandas*. For complete 4 quarter of both *chandas*, there will be $4 \times 8 \times 9 = 288$ letters. This is least common multiple (LCM) of 32, 36-number of letters in these *chandas*.

(ii) *Vāk* is *Bṛhatī* as per *Prāṇa* ^(21, 23). It has 8 places of creating sound ⁽⁵⁵⁾- 3 for vowel and 5 for consonants. Thus, for *Bṛhatī* of 36 letters, there are 36×3 vowels and 36×5 consonants. Root of word is unclassified Om (ॐ). Total number of letters is $108 + 180 + 1 = 289$.

(iii) Garland of letters (*Varṇa-mālā*) is also called *lipi* meaning surface or its coating. A plane can be filled with a single mark in 17 ways of motion of the mark. So, 17 is called *Ghana* (cloud, dense) or *Prajāpati*⁽⁵⁷⁾. 3 dimensional space is filled by combination of 2 planes, so there will be 17^2 letters or signs.

(f) Thousand letters-Beyond *Vyoma*, *Gaurī-vak* has 1000 letters⁽⁵²⁾. In Indian hemisphere, south of *Vindhya* mountain is *Bhū loka* (*Bhū-varāha* at 15^0 latitude at Tirupati), *Vindhya* to *Himalayas* is *Bhuvar loka* and Tibet (*Triviṣṭap*) is *Svar loka* or *Vyoma*. Beyond that is *Maharloka* or China (*Mahān* or Han) having 1000 letters in the script. For 15 *Sāhasrī* (thousands), there should be a total of 15,000 letters⁽⁵⁰⁾. For a single *māṇḍala* (e.g. earth), 3000 letters will do. It has separate signs for each word as per grammar of *Bṛhaspati*⁽¹⁵⁾. However, basic signs are 50-equal to letters in *Devanāgarī*. There are 12 link signs, similar to 12 extra letters of *Maya* script. By combining, it becomes equivalent to *Brāhmī*. In fact, a symbolic script for Chinese *Tantra* called I-Ching has combinations of 3 dots and 3 dashes^(34, 47) which will be $2^6=64$.

7. Form and order-Forms of letters always keep changing. Still, forms of some letters was same in all scripts. *Agni purāṇa* and some *tantra* texts give meanings of individual letters. Signs of these letters indicated those meanings. Letter A was always triangular and H was with double loop⁽⁵⁸⁾. In most languages, sign of vowel A and number 1 is vertical line⁽⁴⁹⁾ like a *kuśa* (reed).

Direction of writing has 3 conventions in 3 regions from *Puṣkara* (Bukhara), place of *Brahmā* who had given names to all objects⁽⁴¹⁾. *Puṣkara*⁽⁵⁹⁾ has been stated 12^0 west of Ujjain (old 0^0 longitude of world). *Vedāṅga jyotiṣa* was written at this place where maximum day length was 18 hours corresponding to 35^0 north latitude. In China and Japan, north east of *Puṣkara*, script moves from up downwards, as north direction is shown up in map. In west of *Puṣkara*, script is from right to left, as west direction is to the left in map. In India to south east of *Puṣkara*, script moves to right which is direction of east in map. *Bhūta-lipi* of *Tantra* was also written to left side as *Bhūtanātha* (*Śiva*) is also caled *Vāmadeva* (left God).

Sequence of letters in *Deva-nāgarī* and *Brāhmī* is-vowels, *sparśa*, *antahstha* and *ayogavāha*. Within these classes, letters are in order of places of sound from navel to lips. In each group of 5, *sparśa* letters are from a single point of sound. The letters are in order of *spṛṣṭa* (normal touch, plain or with h), *mrdu-spṛṣṭa* (soft touch, plain or with h), and *anunāsika* (nasal). Number symbols in this script is called *Kaṭapayādi*, i.e. 1, 2, 3, 9, 0, start (*ādi*) with *Ka*, *T*, *Pa*, *Ya*. *Āryabhaṭa* (360 *Kali* = 2642 BC, manipulated by British to 3600 *Kali*) has indicated numbers 1 to 25 by 25 letters from *Ka* to *Ma*. This has been used earlier also in Vedic literature. *Bha*=24, *Bhū* has 24 elements of *Sāṅkhya*, *Dha* =14. *Damaru* (drum) of *Śiva* had sounded 14 times, so it is called *Dhakkā*. Sequence of letters in Hebrew, Arabic was in order of numerical words of *sanskrit*. Alfa = *alpa* (small, start) =1, Beta=*dvitīya* =2. Since these were first two letters of script, it was called Alphabet.

References

(1) Sequence of 5 *mahā-bhūta* (great elements) from *Brahma* is-*ākāśa* (space), *vāyu* (air, motion), *agni* (dense energy), *āpa* (water, uniform spread of matter), *pṛthivī* (compact base)-*Taittirīya Upaniṣad* (2/1/3)-

तस्माद्वा एतस्मादात्मन आकाशः सम्भूतः। आकाशाद्वायुः। वायोरग्निः। अग्नेरापः। अद्भ्यः पृथिवी। (तैत्तिरीय उपनिषद् २/१/३)

(2) *Taittirīya Brāhmaṇa* (3/12/9/1) tells that all forms (*mūrtti*) are from *Rk*, all motion is from *Yajur*, all radiance or field is from *Sāma* an everything is from *Brahma* (*Atharva*=unchanging)-ऋग्भ्यो जातां सर्वशो मूर्त्तिमाहुः, सर्वा गतिर्यजुषी हैव शश्वत्।

सर्वं तेजं सामरूपं ह शश्वत्, सर्वं हेदं ब्रह्मणा हैव सृष्टम्। (तैत्तिरीय ब्राह्मण ३/१२/९/१)

Pāṇini was contemporary of *Vyāsa* and *Patañjali* in about 3200 BC. They have written commentaries on works of each other. On basic of 43 letter code in 14 parts called *Māheśvara-sūtra*, he wrote 4000 *sūtras* (code of rules) on sanskrit grammer. In appendix, he listed about 2000 root verbs (*dhātu*) in 10 groups. *Vid* verb occurs 5 times, one is with suffix *lr*. Meaning in list (4/60) is to exist. Existence is in forms-subject of *Rk*. Verb (6/141) means to gain, that is by motion-subject of *Yajurveda*. Verb at (2/57) means to know, same at (10/57) means to be place of consciousness or talk. *Vid* (7/13) means to consider-that is with reference to background or stored knowledge-that is *Mahar* or *Athatva* (fixed). *Veda* is formed from verb *vid* by applying suffix-*Ghañ*.

विद् सत्तायाम् (४/६०) विदलृ लाभे, प्राप्तौ (६/१४१) विद् ज्ञाने (२/५७) या विद् चेतनाख्यान निवासेषु (१०/१७७) विद् विचारणे (७/१३) वेद =विद् +घञ्

(3) *Brahmā* was the first among *Devas* (called Adam in Bible). First he taught *Brahma-vidyā* which is foundation of all knowledge to his eldest son *Atharvā*-so it was called *Atharva-veda*. It was divided into 2 parts-unification was called *Parā* and classification was *Aparā*. From *Aparā*, 4 *vedas* and 6 *angas* (limbs) appeared (*Muṇḍaka upaniṣad* 1/1/1-5).

ॐ ब्रह्मा देवानां प्रथमः सम्बूव, विश्वस्य कर्ता भुवनस्य गोप्ता। स ब्रह्मविद्या सर्वविद्याप्रतिष्ठामर्थवर्य ज्येष्ठपुत्राय प्राह।१। द्वे विद्ये वेदितव्ये इति ह स्म यद् ब्रह्मविदो वदन्ति, परा चैव अपरा च। (४)

तत्रापरा ऋग्वेदो यजुर्वेदः सामवेदो, अथर्ववेदः, शिक्षा, कल्पो, व्याकरणं, निरुक्तं, छन्दो, ज्योतिषमिति। अथ परा यया तदक्षरमधिगम्यते। (५)-मुण्डकोपनिषद्, १/१)

There are 5 stages of *Avidyā*-this is not lack of *vidyā*, rather it is *Aparā-vidyā*, i.e. classiied knowledge, which is called science. Its 5 stages are-1. *Avidyā* =classification, 2. *Asmitā* (iden-tity of each class), 3. *Rāga*-link between 2 classes or ojects, 4. *Dvesa*-differences between 2 classes, 5. *Abhiniveśa* =settled rule or principle-

अविद्यास्मितारागद्वेषाभिनिवेषाः क्लेषाः। (पातञ्जल योगसूत्र २/३)

(4) *Puruṣa* (man or niverse) or *Prajāpati* (creator) is 6-fold-

षट्क्षिधो वै पुरुषः षडङ्गः। (ऐतरेय ब्राह्मण २/३९), पुरुष एव षष्ठमहः (कौषीतकि ब्राह्मण उपनिषद् २३/४)

प्राजापत्यं वै षष्ठमहः (कौषीतकि ब्राह्मण उपनिषद् २३/४८, २५/११, १५)

(5) *Viśva* (world) means complete or whole. Root verb *Viśa* (*Pāṇini* 6/133) means to enter, and *Viśl* (3/13) means to cover, embed. *Viśnu* means *veṣṭita* (embedded) or *veṣṭā* (encom-passing). Any closed, complete system including *kalila* (cell) is a *viśva*-

अनाद्यनन्तं कलिलस्य मध्ये विश्वस्य स्त्रामनेकरूपम्।

विश्वस्यैकं परिवेष्टितारं ज्ञात्वा देवं मुच्यते सर्वं पाशीः (श्वेताश्वतर उपनिषद् ५/१३)

(6) There are 7 *lokas*, 7 *prāṇa*, etc from 7 tongues of *Agni* (*agri*=prior creation). Out of 7

prāṇa, 2 are *Asat* (beyond perception due to being smaller than limit of measure- (*Pitar*) or formless without distinction (*Rśi*). Thus there are 5 *prāṇa*, 5 *parvas* of space. *Katha upaniṣad* (1/3/1) tells these 5 *parvas* as 5 *agnis* (levels of condensation) starting from formless source.

सप्त प्राणाः प्रभवन्ति तस्मात् सप्तार्चिषः समिधः सप्त होमाः।

सप्त इमे लोका येषु चरन्ति प्राणा गुह्यशया निहिताः सप्त सप्त ॥ (मुण्डक उपनिषद् २/१/८)

पञ्चस्रोतोऽम्बु वक्रां पञ्चयोन्युग्रवक्रां पञ्चप्राणोर्मि पञ्चबुद्ध्यादिमूलाम्।

चार्वर्ता पञ्चदुःखौघवेगां पञ्चाशद् भेदां पञ्चपर्वमधीमः॥ (श्वेताश्वतर उपनिषद् १/५)

ऋतं पिबन्तौ सुकृतस्य लोके गुहां प्रविष्टौ परमे परार्थे।

छायातपौ ब्रह्मविदो वदन्ति पञ्चाग्नयो ये च त्रिणाचिकेताः॥ (कठ उपनिषद् १/३/१)

Prajāpati (creator) created successive images of *Svayambhū* (self created) universe which is *Brahma*-(1) *Agni* (compact matter or energy)-last form is earth planet, (2) *Indra* (radiation)-its center is sun, (3) *Soma* (dispersed matter)-indicated by relative cold moon), (4) *Parameṣṭhī* *Prajāpati*-largest brick which is galaxy where creation starts. The sequence is in *Śatapatha Brāhmaṇa* (11/6/1/12, 13). Individually, each stage is described in (6/1/1/8)-*Svayambhū*, (6/1/1/9, 10)-*Parameṣṭhī* in form of *vāri* or *ap* (water), (11/6/1/1)-Sun as triple *vidyā*, (6/1/2/1)-Earth as a body, (6/1/2/3)-field of earth, (6/1/2/4)-sphere of moon orbit.

स ऐक्षत प्रजापतिः (स्वयम्भूः) इमं वा आत्मनः प्रतिमामसृक्षिः। आत्मनो ह्येतं प्रतिमामसृजत। ता वा एताः प्रजापतेरधिदेवता असृज्यन्त- (१) अग्निः (तद् गर्भितो भूषिण्डश्च), (२) इन्द्रः (तद् गर्भितः सूर्यश्च), (३) सोमः (तद् गर्भितः चन्द्रश्च), (४) परमेष्ठी प्राजापत्यः (स्वायम्भुवः)-शतपथ ब्राह्मण (११/६/१/१२, १३)

द्रष्टव्य-स्वयम्भू-शतपथ (६/१/१/८), परमेष्ठी -वारि या अप् रूप-शतपथ (६/१/१/९, १०)

सूर्य-त्रयी विद्या (श्रुति के ३ पद) रूप-शतपथ (११/६/१/१)

भूषिण्डल-भूषिण्ड -शतपथ (६/१/२/१) भूक्षेत्र-शतपथ (६/१/२/३)

चन्द्रमण्डल-शतपथ (६/१/२/४)

(7) Diameter of earth is 1000 or 1600 *yojanas* as per definition of *yojana* on basis of earth size in all texts of astronomy. In modern units, it is 12,756 kms. (equator). Its 10^7 part is 1.27 meter which can be taken as average of height/weight of man.

(8) *Siddhānta-darpaṇa* (19/108-114), commentary by A.K. Upadhyay, Nag Publishers, Delhi-7) tells about 3 zones of solar system-heat, bright and light zones are 2000, 100,000 and 25,00,000 sun-diameters from sun. Various Vedic texts tell *Rudra* (intense heat) upto 100 sun diameters (near earth orbit). *Śiva* (calm) zone is upto 1000 diameters.

शतशीर्ष रुद्र शमनीयम्, ह वै तच्छतरुद्रियमित्याचक्षते परोऽक्षम् (शतपथ ब्राह्मण ९/१/१/७)

शत योजने ह वा एष (आदित्यः) इतस्तपति (कौषीतकि ब्राह्मण उपनिषद् ८/३)

सहस्रं हैत आदित्यस्य रश्मयः (जैमिनीय ब्राह्मण उपनिषद् १/४४/५)

असौ यस्ताम्रो अरुणः उत बभ्रुः सुमङ्गलः। ये चैनं रुद्रा अभितो दिक्षु श्रिताः सहस्रशो हेड ईमहे। (वा. यजुर्वेद १६/६)

Maitreya maṇḍala is 100,000 *yojanas* (sun diameters).

भूमेर्योजन लक्षे तु सौरं मैत्रेय मण्डलम्। लक्षाद्विवाकरस्यापि मण्डलः शशिनः स्थितम्। (विष्णु पुराण २/७/५)

Wheel of sun is 9000 *yojanas* i.e. 1000 *yojana* radius. Planets upto saturn in this wheel, cause visible influence on earth and make a grand cycle (wheel) of *yuga* of 43,20,000 years.

योजनानां सहस्राणि भास्करस्य रथो नव। ईषादण्डस्तथैवास्य द्विगुणो मुनिसत्तम्॥

Ratha or spherical zone of sun is 157 million *yojanas*.

सार्ध कोटिस्तथा सप्त नियुतान्यधिकानि वै। योजनानां तु तस्याक्षस्तत्र चक्रं प्रतिष्ठितम्॥(विष्णु पुराण २/८/२-३)

Solar field is 30 *dhāma* (2^{30} of earth size) till which its light is more. Each *dhāma* is 2 times previous ones starting with earth as first *dhāma* (*Bṛhadāraṇyaka upaniṣad* 3/3/2).

त्रिंशद्वाम वि-राजति वाक् पतङ्गाय धीयते (ऋक् १०/१८९/३)

(9) *Paramesthī* is collection of suns and *parama-pada* of *Viṣṇu*. That is 10^7 times size of solar system and last abode of *Mana* (mind)-both have same number of particles (10^{11}).

तद्विष्णोः परमं पदं सदा पश्यन्ति सूर्यः। समूळहमस्य पांसुरे। (ऋक् १/२/२०)

कोटि सूर्यं प्रकाश वैभव संकाशं सूर्याकाशं भवति। (मण्डल ब्राह्मणोपनिषद्, २, अद्वयतारकोपनिषद्)

गमगमस्थं गमनादिशून्यमोऽकारमेकं रविकोटि दीप्तिम्।(२५)

यन्मनो विलय यान्ति तद्विष्णोः परमं पदम् (२५) (ध्यानविन्दु उपनिषद्)

Surya siddhānta (12/80) gives circumference of galaxy as 1.87×10^{16} *yojanas*, where *yojana* is *Bha-yojana*, 27 times earth *yojana* of about 8 kms.

ख व्योम ख-त्रय ख-सागर षट्क नाग व्योमाष्ट शून्यं यमरूपं नगाष्ट चन्द्राः।

ब्रह्मण्डं सम्पुटं परिभ्रमणं समन्तादभ्यन्तरा दिनकरस्य कर प्रसाराः। (सूर्य सिद्धान्त १२/८०)

This *guhā* (largest cave) has been called 10^{17} *yojanas* in *dhāma-yojana* =55.5 km (half degree of earth circumference) in *Katha upaniṣad* (1/3/1) referred in (5).

(10) *Puruṣa* is 10 times the *Bhūmi* entirely covered by it.

स भूमिं विश्वतो वृत्त्वात्यतिष्ठद्वशाङ्गुलम् (पुरुष सूक्त, १)

(11) From the formless abstract *Svayambhū*, 6 *lokas* have emerged which are changing (*raja* =motion). Correspondingly, among 7 *Rsis*, one is source (*Atri* or *Pūṣā*), others are in 3 pairs. साकञ्जानां सप्तथमाहुरेकजं षडिद्यमा ऋषयो देवजा इति। तेषामिष्टानि विहितानि धामशः स्थात्रे रेजन्ते विकृतानि रूपशः॥
(ऋक् १/१६४/१५, अथर्व १/९/१६, तैत्तिरीय ब्राह्मण १/३/१)

अचिकित्वाज्जिकितुषश्चिदत्र कवीन् पृच्छामि विद्वने न विद्वान्। वियस्तस्तम्भं षडिमा रजांसि-अजस्य रूपं किमपि स्विदेकम्।
(ऋक् १/१६४/६, अथर्व १/९/७)

(12) *Pañcha* =5, divisions in 5s is called *Pāṅkta*. But, *Pankti* =*Pañcha+ ktin*, and it means 10. In each quarter of *Pankti*, there are 10 letters (*akṣara*).

पाङ्क्तं वा इदं सर्वम्। पांक्तेनैव पाङ्क्तं स्पृणोतीति। (तैत्तिरीय उपनिषद् १/७/१)

There are 3 earths and their 3 skies. The earths are defined by reach of light of sun and moon. Earth planet is first earth lighted by sun and moon both. Solar system is secnd earth lighted by sun. Last reach of sun rays, where it will look like a point, is 3rd earth-called galaxy. In each earth, rivers, mountains, oceans are described as on earth. Planetary sysstem of sun upto Neptune is disc shaped earth of 1000 million *yojana* diameter (*yojana* =1000 parts of earth diameter at equator). Its half part of 500 million *yojanas* is *loka* (lighted) and outer part is *Aloka* (dark). The zones formed by apparaent rotation by planets is called 7 *dvīpas* (continents) with same names as continents on earth (*Bhāgavata purāṇa*, part 5 etc.). Intermediate spaces are oceans. In largest earth-galaxy, central rotating disc is called ariver *Ākāśa-gangā*.

रविचन्द्रमसोर्यावन् मयूर्खैरवभास्यते। स समुद्रं सरिच्छैला पृथिवी तावती स्मृता। (विष्णु पुराण २/७/३)

Sky of each earth is in same ratio (10^7) as ratio of man to earth.

यावत् प्रमाणा पृथिवी विस्तारं परिमण्डलात्। नभस्तावत् प्रमाणं वै व्यास-मण्डलतो द्विज।(विष्णु पुराण २/७/३)

Worlds smaller than man start with *Bālāgra* (hair end, 10^5 parts of man) or cell (*Kalila*). By dividing the size by hundred thousands repeatedly we get 6 more smaller levels. 10^5 parts of cell is atom and then *Kundalinī* (nucleus) in same ratio.

वालाग्रं शत-साहस्रं तस्य भागस्य भागार्धं तत्क्षये तु निरञ्जनम्। (ध्यानविन्दु उपनिषद् ४)

Smallest level is *Rsi* (10^{-35} meters). Higher are called *Pitara* (proto-type), *Deva-dānava* (creative and dormant energies). Creation is from *Devas* of 33 types only, not from 99 *Dānava*. So, created world is 1/4 parts of the whole (*Puruṣa-sūkta*, 3, 4). From *Devas* are moving particles

(*Jagat*) of 3 types-*Chara Lepton*), *sthānu* (baryon) and *anu-pūrva* (meson link particles).

ऋषिभ्यः पितरो जाताः पितृभ्यो देव-दानवाः देवेभ्यश्च जगत् सर्वं चरं स्थाणवनुपूर्वशः। (मनु स्मृति ३/२०१)

Three dimensions of space are 3 steps of *Viṣṇu* in 3 directions.

इदं विष्णुर्विचक्रमे त्रेधा निदधे पदम्। (ऋक् १/२२/१७)

(13) *Kāla* (time) is perception of change and as perception, it is form of *Śiva*. Irreversible change always decays, called entropy in second law of thermodynamics. That time increases in direction of decay of world (or any object).

कालोऽस्मि लोकक्षयकृत् प्रवृद्धः। (गीता ११/३२)

Kāla creates *Bhūtas* (beings), grows and decays them. So, *Bhūta-nātha* is *Śiva* or *Mahā-kāla*.

कालात्स्वन्ति भूतानि कालाद् वृद्धिं प्रयान्ति च। काले चास्तं नियच्छन्ति कालो मूर्तिरमूर्तिमान्। (मैत्रायणीय आरण्यक ६/१४)

Viṣṇu is form of *yajña* (creation of useful objects), observer (*Adam*, *ātmā*), creator, consumer.

होता भोक्ता हविर्मन्त्रो यज्ञो विष्णुः प्रजापतिः। सर्वः कश्चित्प्रभुः साक्षी योऽमुमिन्भाति मण्डले। (मैत्रायणीय आरण्यक ६/१६)

(14) *Rṣi* (*rassi* in Hindi, string) are *asat* (invisible) *prāṇa* (force). They pull with force and work, so they are called *Rṣi*.

असद्वा इदमग्र आसीत्। तदाहुः-किं तदासीदिति। ऋषयो वाव तेऽग्रेऽसदासीत्। तदाहुः-के ते ऋषयः। प्राणा वा ऋषयः, ते यत्पुराऽस्मात् सर्वस्मात् इदमिच्छन्तः श्रमेण तपसा अरिषन्, तस्मात् ऋषयः। (शतपथ ब्राह्मण ६/१/१/१)

Seven *prāṇa* appeared from That (7 tongues of first born *Agni*) as well as 7 *archi* (flames-radiation), 7 *samidhā* (burning or energy giving), 7 *homa* (consumables). These *lokas* (spaces) are 7 in which 7 *prāṇas* move. Cavities (in space or human body) are also 7-7.

सप्त प्राणाः प्रभवन्ति तस्मात् सप्तार्चिषः समिधः सप्त होमाः।

सप्त इमे लोका येषु चरन्ति प्राणा गुहाशया निहिताः सप्त सप्त ॥ (मुण्डक उपनिषद् २/१/८)

(15) *Vṛtra* creates boundary of objects (*vṛtta* =circle)-

वृत्रो ह वा इदं सर्वं वृत्वा शिश्ये। यदिदमन्तरेण द्यावा पृथिवी स यदिदं सर्वं वृत्वा शिश्ये तस्माद् वृत्रो नाम।

(शतपथ ब्राह्मण १/१/३/१३, ३/९/४/२, ४/२/५/१५)

(16) Ninth dimension creates new.

नवो नवो भवति जायमानोऽहां केतुरुषमामेत्यग्रम्। (ऋक् १०/८५/१९)

It is called *Randhra* used for number 9. There are 9 *randhra* (fissures) in human body- 2 ears, 2 eyes, 2 nose, mouth, organs of urine and stool. Since there are 9 deficits, there are 9 *Tuṣṭi* (satisfaction) in *Sāṅkhya* philosophy.

(17) All pervading element is called *Rasa* (uniform, juice) which created (It is called *sukṛta* =translated as good creation n Bible). By perceiving it, we get joy, so it is called *Ānanda* also. यद्वै तत्सुकृतं रसो वै सः। रसं ह्येवाय लब्ध्वाऽनन्दी भवति। को ह्येवान्यात् कः प्राणाद् यदेव आकाश आनन्दो न स्यात्। (तैत्तिरीय उपनिषद् २/७/२)

(18) There are 10 views (*vāda*) of formation of world as per *Nāsadīya-sūkta* (Rk 10/128/1-7, *Taittirīya Brāhmaṇa* 2/8/9/3-9)-(1) *sat-asat*= tangible, non-tangible, (2) *Raja* =motion, (3) *Vyoma*=space, (4) *Apara* =other, varieties, (5) *Āvaraṇa*=cover, (6) *Ambha* (condensation, clouds of 9 types), (7) *Amṛta-mṛtyu* =decaying and static, (8) *Aho-rātra*= creation is day or *ahar* of *Brahma*, decay is night, (9) *Daiva* =Energy of space, (10) *Samśaya* = uncertainty. Other examples are-*yajña* has 10 *hotā* (creators)-यज्ञो वै दश होता। (तैत्तिरीय ब्राह्मण २/२/१/६)

Virāt (grand, visible world) is of 10 *akśaras*- दशाक्षर वै विराट् (शतपथ ब्राह्मण १/१/१/१)

Prajāpati is 10 *hotā*- प्रजापतिर्वै दश होता। (तैत्तिरीय ब्राह्मण २/२/१/६)

Pratiṣṭhā (foundation) is 10th *ahar* (day, creation cycle)

प्रतिष्ठा दशममहः (कौषीतकि ब्राह्मण उपनिषद् २८/२)

(19) *Vāk* (word) has 3 *pad*(parts) within *guhā* (cave of head), 4th is expressed word of man
चत्वारि वाक् परिमिता पदानि तानि विदुर्ब्रह्मणा ये मनीषिणः।

गुहा त्रीणि निहिता नेङ्गयन्ति तुरीया वाचो मनुष्या वदन्ति॥(ऋक् १/१६४/४५)

(20) Abstract formless *Brahma* transforms itself into forms. In same way, abstract though is transformed into expressed words. If it is accurate, literature will be eternal.

स पर्यगात् शुक्रम् अकायम् अत्रणम् अस्नाविरम् शुद्धम् अपापविद्धम्।

कविर्मनीषी परिभूः स्वयम्भूः याथातथ्यतोऽर्थात् व्यदधात् शाश्वतीभ्यः समाभ्यः। (ईशावास्य उपनिषद्, ८, यजु. ४०/८)

He is *Kavi* (Poet, here it means creator. He places objects in pockets =*kavala*), *Manīṣī* (thinker, His creation is by desire or *Mana*), *Paribhū* (surrounding *Bhū-Puruṣa-sūkta*, 1), *Svayambhū* (self created). He creates pure abstract by surrounding it in many ways-

Abstract thought *Paryagāt* Expressed words

Śukra (brigh) (by surrounding) White-black (*tama*= hidden)

Akāya (without body) Body (of letter, words)

Asnāviarm (without links) Link between word and meaning (*Vāk-artaḥ-pratipatti*)

Suddha (pure) *Aśuddha* (errors, limitations of language, bias)

A-pāpa-viddhā (un-broken) Broken in parts of *akṣara*, *pada*, *vākyā*

Word meaning (*artaḥ*) in mind is to be expressed out as such-then the words last for many *samā* (years, formed of *mā*). From abstract *Brahma* also, various boundaries create levels of world. Individual forms decay, but the chain called eternal tree lasts for ever.

(21) *Vāk* of *Svayambhū* (*Brahma*, universe) is *Vekurā* or *Parā*. *Vāk* of *Parameṣṭhī* is from its *ambhas* (water with waves), so it is *Āmbhṛṇī*. *Ambhṛṇī* is used in *Vājasaneyī yajur* (19/27) with meaning = to feed people; or in *Rk* (1/133/5) = to fill with (pain), *sam-mṛṇa* = remove. *Vāgāmbhṛṇī* is famous *Rṣi* (female) of *Devī-sūkta* in *Rk* (10/125) which says that it contains all forms of creation and gods.

इयं या परेमष्ठिनी वागदेवी ब्रह्मा (स्वयम्भू) संशिता। यथैव संसृजे घोरं तथैव शान्तिरस्तु नः। (अथर्व सं. १९/९/३)

सुषुम्नः सूर्यश्चिन्द्रमा गन्धर्वस्तस्य नक्षत्राण्यप्सरसो। (अप्सरसो वेकुरयः) वेकुरयः (तैत्तिरीय संहिता ३/४/७/१)

Indra is radiation of all suns (*Indha* =to burn, *Indhana* =fuel) spread in all points. That is undivided *Vāk* called *Sarasvatī* (of *rasa*=continuous), riding on *Hamsa* (swan, light-ray). The *Vāk* divided into 49 zones of galaxy by winds called *Marut* is *Indra-patnī* (wife of *Indra*) or *Anuṣṭup*. In human body, sun energy placed in navel drives cycle of breath-called *Hamsa*. Out flow is *ham*, inflow is *sa* (sounds in breath). *Sarasvatī* in brain rides on that *Hamsa*. Flow of air in cavities and contact with points in mouth creates *vāk*-that is *Anuṣṭup*. Its energy in form of *Indra* is *Bṛhatī*.

वाचं देवा उपजीवन्ति विश्वे वाचं गन्धर्वा पश्वो मनुष्याः।

वाचीमा विश्वा भुवनानि अर्पिता सा नो हवं जुषताम् इन्द्रपत्नी॥ (तैत्तिरीय ब्राह्मण २/८/८/४)

वीभत्सूनां सयुं हंसम् आहुरपां दिव्यानां सख्ये चरन्तम्।

अनुष्टुभमनु चर्चूर्यमाणं इन्द्रं निचिक्युः कवयो मनीषाः। (ऋक् १०/१२४/९)

Ah is *Brahma*. man is from him, so he is *Aham* (I). From him, *Bṛhati* thousand (36000) energy has come. So, man life is for that many days.

अः इति ब्रह्मा तत्राऽगतम् अहम् -इति। तद्वा इदं बृहती सहस्रं सम्पन्नम्। तस्य वा एतस्य बृहती सहस्रस्य सम्पन्नस्य षट्त्रिंशतम् अक्षराणाम् सहस्राणि भवन्ति। पुरुषायुषोऽह्नां सहस्राणि (३६०००) भवन्ति। (ऐतरेय आरण्यक २/३/८)

(22) 4 steps of *Vāk* are in *Śikṣā* (rules of pronunciation) of *Pāṇini*-

आत्मा बुद्ध्या समेत्यर्थान् मनो युक्ते विवक्षया। मनः कायान्निमाहन्ति स प्रेरयति मारुतम्॥१॥

मारुतस्तूरसि चरन् मन्दं जनयति स्वरम्। कण्ठे तु मध्यमं शीर्षिं तारं जनयति स्वरम्॥२॥
सोदीर्णो मूढ्याभिहतो वक्त्रमापद्य मारुतः। वर्णन् जनयते-तेषां विभागः पञ्चधा स्मृतः॥३॥
स्वरतः कालतः स्थानात् प्रयत्नानुप्रदानतः। (पाणिनीय शिक्षा)

Expressed word had 4 parts-sound, letters, word, sentence-
ध्वनिर्वर्णः पदं वाक्यं इत्यास्पद चतुष्टयम्। यस्याः सूक्ष्मादि भेदेन वार्गदेवीं तामुपास्महे॥

(23) *Vāk* of *Indra* (space, energy) is *Bṛhatī* (9 points), *vāk* of earth (points of sound) are *anuṣṭup* (8 points) *Vāk* has 8 *pada* (sond parts) byt *Indra* (energy) points are 9-
वाचमष्टापदीमहं नवस्त्किमृतस्पृशम्। इन्द्रात् परि तन्वं ममे। (ऋक्, ८/७६/१२)

Brahma is *Gāyatrī*, *vāk* is *anuṣṭup-*

ब्रह्म वै गायत्री वागनुष्टुप् (ऐतरेय आरण्यक, १/१/४)

Aitareya Āraṇyaka (2/3/5,6) tells 9 points of *Indra* energy which is *pāda* of *Bṛhatī*.

(24) *Nirukta* (1/1) of *Yāska* tells 4 origins of words-

तद् यानि चत्वारि पदजातानि नामाख्याते चोपसर्ग निपातश्च तानीमानि भवन्ति।

(25) *Aitareya Āraṇyaka* (2/3/6) describes sentences of 3 types. For detailed explanation, see *Pathyā Svasti* by Pt. *Madhusudan Ojha* (Rajsthan Oriental Institute, Jodhpur).

(26) Earth is measuring rod (*mā*)-

मा छन्दः, तत् पृथिवी,... प्रमा छन्दः, तदन्तरिक्षम्। (मैत्रायणी सं.२/४/९३, काठक सं. ३९/३९)

Earth is *antarvedi* (inner field), its *mahimā* is *bahir-vedi* =outer field. Both have 3 zones each-
पृथिव्यामिमे लोकाः (पृथिवी, अन्तरिक्ष चौ) प्रतिष्ठिताः। (जैमीनीय उपनिषद् ब्राह्मण १/१०/२)

तस्या एतत् परिमितं रूपं यदन्तर्वेदि (भूपिण्डः) अथैष भूमाऽपरिमितो यो बहिर्वेदिः (महापृथिवी)-ऐतरेय ब्रा.८/५)

Size of solar system is taken as 33 *ahar* or *ahah*-their count is *ahargana-*

त्रिंशद्वाम वि राजति वाक् पतङ्गाय धीयते। प्रति वस्तो रहद्युमिः (ऋक्.१०/१८९/३)

Vāk (field, word or sound) of *patanga* (sun, kite) is more bright(*vi-rājate*) upto 30 *dhāma* as known or felt. Each zone (*vasti*=zone in sky) is measured by *ahar* (-*gaṇa* =count).

See also *Rk* (1/132/2,3),(1/32/2), (2/11/5), (1/103/2), (5/29/3), (3/32/11), (4/19/2),
(6/30/4), (4/28/3) etc. and other *vedas*.

द्वात्रिंशतं वै देवरथाह्यचान्यं लोकः। तं समन्तं पृथिवी द्विस्तावत्पर्येति। तां समन्तं पृथिवीं द्विस्तावत्समुद्रः पर्येति।

(ब्रह्मदारण्यक उपनिषद् ३/३/२, अर्थात् शतपथ ब्राह्मण १४/३/१/२)

=This *loka* of *Deva-ratha* (=chariot or body of *devas* or lighed zones) is of 32 *ahar* (*ahāni* =plural of *ahar*). All around, it is the earth (solar system of 33 *ahar* in this context) which is double in size. Again, double sphere around this (34th *ahar*) is sea (spread of galactic matter).

(27) The order of *Sāma* (fields of influence)- Of earth are-*Rathantara* (crossing *Ratha* or rather wheel of solar system), *Vairūpa* and *Śakvara*. Of sun are-*Bṛhat*, *Vairāja* and *Raivata*.

यद्वै रथन्तरम् तद्वैरूपम्। यद् बृहत्, तद्वैराजम्। यद्वै रथन्तरम् तच्छाक्वरम्। यद् बृहत्, तत् रैवतम्। (ऐतरेय ब्राह्मण १७/७/१३)

These are also in *Aitareya Brāhmaṇa* (19/6/18) and *Taittirīya Brāhmaṇa* (1/4/6).

(28) प्राणो वै त्रिवृत्, अर्धमासः पञ्चदशः संवत्सरः सप्तदश, आदित्य एकविंशः-एते वै स्तोमाः (ताण्ड्य महा ब्राह्मण ६/२/२) =The *stomas* (volumes of zones) are *Prāṇa* as 3 square (9), days in half-month i.e. (15), *Samvatsara* (sun) at (17) and *Āditya* at (21).

रसतमं ह वै तद्रथन्तरमित्याचक्षते परोऽक्षम्। (शतपथ ब्राह्मण १/१/२/३६)

असौ वा ऽआदित्य एष रथः। तं तरति इति रथन्तरम्। (शतपथ ब्राह्मण १/४/१/१५)

=*Āditya* (field of sun) is called its (of sun) *Ratha* (vehicle). The *sāma* (field) crosses (*tara*) is, so it is called *Rathantara*.

शतयोजने ह वा एष (आदित्यः) इतस्तपति (कौषीतकि ब्राह्मण उपनिषद् ८/३)

= This *Āditya* heats at 100 *yojanas*.

सहस्रं हैत आदित्यस्य रशमयः (जैमिनीय उपनिषद् १/४४/५०)

= Brightness of *Āditya* is 1000.

असौ यस्ताम्नो अरुण उत बभूः सुमङ्गलः। ये चैनं रुद्रा अभिता दिक्षु श्रिताः सहस्रोऽवैषां हेड ईमहे।(यजु १६/३)

=At 1000 (diameters), this looks copper-red (near saturn orbit).

(29) From zones of *Agni* (9 *ahargaṇa*), *Vāyu* (15) and *Ravi* (*Āditya* at 21), Eternal *Brahma*

(*Atharva*) separated essence of 3 *vedas-Rk*, *Yaju* and *Sāma-*

अग्नि वायु रविभ्यस्तु त्रयं ब्रह्म सनातनम्। दुदोह यज्ञ सिद्ध्यर्थं क्रग् यजुः साम लक्षणम्। (मनु स्मृति १/२३)

(30) See note (4) also. *Prajāpati* (sun) is based at 17 *stomas*-

सप्तदश एव स्तोमो भवति प्रतिष्ठायै प्रजापत्यै (ताण्ड्य महा ब्राह्मण १२/६/१३)

(31) इति स्तुतासो असथा रिसादशो ये स्थ त्रयश्च त्रिंशच्च | मनोदेवा यज्ञियासः | (क्रक्. ८/३०/२)

=Thus they are described (*stutāsah*), they are able (*asathā*) to remove darkness (*risādaśo*)- who are 3 and 30. They are *devas* in *mana* (field of stars in galaxy, whose image is human brain, both with same number of points) who are creative (*yajñiyāsah*).

The *prāṇa* (energy) of each zone is a *deva*, its trait is *devatā*. 33 zones and *deva* are counted- देवता एव त्रयस्त्रिंशस्यायतनं त्रयस्त्रिंशदेवताः प्रजापतिः चतुस्त्रिंशः। (ताण्ड्य महा ब्राह्मण १०/१/१८)

=*Devatā* are in 33 volumes, 34th is *Prajāpati*.

(देवाः त्रयस्त्रिंशत्-) अष्टौ वसव एकादश रुद्रा द्वादशादित्याः प्रजापतिश्च वषट्कारश्च। (ऐतरेय ब्राह्मण २/१८, ३७, ३/२२)

=33 *Devas* are-8 *Vasu*, 11 *Rudra*, 12 *Āditya*, *Prajāpati* and *Vaṣṭakāra*.

अग्निर्वै देवानामवमो विष्णुः परमस्तदन्तरेण सर्वा अन्या देवताः। (ऐतरेय ब्राह्मण १/१)

=*Agni* is lower (first from earth) and *Viṣṇu* is at top. In between are all others *Devatā*.

(32) Each quarter of *Trīṣṭup* is *Rudra* =11-

रुद्रस्त्रिष्टुभं समभरन्। (जैमिनीय उपनिषद् १/१८/५)

एकादशाक्षरा वै त्रिष्टुप् (कौषीतकि ब्राह्मण उपनिषद् ३/२, १०/२, ताण्ड्य महा ब्राह्मण ६/३/१३)

Trīṣṭup is *Indra* or its *Vajra* (Thunder bolt, radiation)-

वज्रस्तेन यत्विष्टुप् (ऐतरेय ब्राह्मण २/१६) त्रिष्टुबिन्द्रस्य वज्रः (ऐतरेय ब्रा. २/२) इन्द्रस्त्रिष्टुप् (शतपथ ब्रा. ६/६/२/७)

(33) *Vajra* is *Vaṣṭakāra*. It is *Vāk* (field of sun) divided by grades of radiation into 6 zones, so it is called *Vaṣṭakāra*.

वज्रो वै वषट्कारः (ऐतरेय ब्रा. २/१६, कौषीतकि ब्रा. उप. ३/५, शतपथ ब्रा. १/३/३/१४, गोपथ ब्रा. उत्तर ३/१,५)

वाग्वै वषट्कारो, वग् रेतो रेत एवैतत्सिज्जति षडित्यृतवो वै षट् ... तस्मादेव वषट् करोति। (शतपथ ब्रा. १/७/२/२१)

षडिति वषट् करोति... वौषट् इति वषट् करोति ... (ऐतरेय ब्राह्मण ११/६)

(34) Signs of *Devas* was written with 3 symbols and they were placed by them.

देवलक्ष्मं वै त्रालिखिता तामुत्तर लक्ष्माण देवा उपादधत् ... (तैत्तिरीय संहिता ५/२/८/३)

Each symbol was a combination of line (dash) and its point (dot) as shown in note (47). Pair of a line (indicated by 1) and a dot (0) can be written in 4 ways-00, 01, 10, 11. So, 3 pairs of symbols will have $4^3 = 64$ forms. That is used in I-ching tantrik script of China and similar to Ascii code used in computer.

(35) Cosmic for which creates is called *Kūrma* (*kurmah=* we do)-

स यत्कूर्मो नाम। एतद्वै रूपं कृत्वा प्रजापतिः प्रजा असृजत्, यदसृजत् अकरोत्। तद् यद् अकरोत् तस्मात् कूर्मः। कश्यपो वै कूर्मः तस्मादाहुः सर्वा प्रजाः काश्यप्य इति। (शतपथ ब्राह्मण ७/५/१/५)

Size of *Kūrma* is estimated to be 10^{18} *yojanas* (100 thousands *Śanku*) = 10^6 light years. That is 10 times the size of galaxy (*Paramesṭhī*)-

मानेन तस्य कूर्मस्य कथयामि प्रयत्नतः। ७। शङ्कोः शतसहस्राणि योजनानि वपुः स्थितम्। (नरपति जयचर्या-स्वरोदय-कूर्म चक्र)

Size of Śakvara sāma also has been called Śanku (10^{13}) which held the galaxy divided into Ahar zones-

तद् (शङ्कु साम) उ सीदन्ति-इयमित्याहुः (१२) शङ्कु भवत्यहनो धृत्यै यद्वा शङ्कुना तदाधार (११)-(ताण्ड्य ११/१०)
 Śakvara sāma zone was able (Śaklṛ) to create, so it was called Śakvarī containing lokas-यदिमान् लोकान् प्रजापतिःसृष्टवेदं सर्वमशक्नोद् यदिदं किञ्च तत् शक्वर्योऽभवत् तत् शक्वरीणां शक्वरीत्वम्(ऐतरेय ब्रा.५/७)
 Its zones have diameters in Ahar units are equal to numbers of letters in Chandas (24, 44, 48), so it is called Chhandomā-stoma-

गायत्रमयनं (२४) भवति ब्रह्मवर्चसकामस्य....त्रैष्टुभमयनं (४४) भवति ओजस्कामस्य, जागतमयनं (४८) भवति पशुकामस्य...
 (ताण्ड्य महा ब्राह्मण १४/४/१०)

तद्यच्छन्दोभिर्निर्मिताः तस्मात् छन्दोमाः (कौरीतकि ब्राह्मण उपनिषद् २६/७)

(36) Brahma-vaiwartta purāṇa, Prakṛti khaṇḍa, chapter 3 describes creation of Great child (galaxy) from eternal Goloka.

(37) By Tapa (heating) Parameśṭhī (galaxy) is created as a point of Svayambhū-सोऽयं पुरुषः प्रजापतिरकामयत-भूयान्तस्यां प्रजायेय इति। सोऽश्राम्यत् स तपोऽतप्यत .. सैवास्मै प्रतिष्ठा अभवत् .. प्रतिष्ठा ह्येष यद् ब्रह्म (८) तस्यां प्रतिष्ठायां प्रतिष्ठितोऽतप्यत। सोऽपोऽसृजत वाच एव लोकात्। ..सो अनया त्रया विद्यया सह अपः प्राविशत्। तत् आण्डं (ब्रह्माण्ड) समवर्त्तत (९/१०)-(शतपथ ब्राह्मण ६/१/१/९-१०)

Gopatha Brāhmaṇa, part 1 (1/2) may also be seen.

(38) Three thousands (zones) are called Head (śīrṣa), akṣa (axis, eye), and feet (pāda)-सहस्रशीर्षा पुरुषः सहस्राक्षः सहस्रपात् (पुरुष सूक्त १)

These fields have been created by two opposite forces in solar system (or galaxy)-Viṣṇu attracts (inwards) and Indra is radiation (outwards)-Rk 6/69/8. The three sahasra (1000) zones formed by their interaction are-Loka, Veda and Vāk-Aitareya Brāhmaṇa (6/14) उभा जिज्ञुन् पराजयेथे न पराजिग्ये कतरश्च नैनोः। इन्द्रश्च विष्णु यदपस्पृधेथां त्रैधा सहस्रं वितदैरयेथाम् (ऋक् ६/६९/८) किं तत् सहस्रमिति ? इमे लोकः इमे वेदाः अथो वागिति ब्रूयात्। (ऐतरेय ब्राह्मण ६/१४)

(39) Rasa is the original matter of universe. We get happiness after getting it, so it's called Ānanda also. Its amount or availability is reduced when it is converted into matter and is least on earth (loka of men) which is densest in solar system. Going out from earth, its amount increases by 100 for each dhāma or Loka (Taittirīya upaniṣad, śikṣā-vallī, anuvāk 8, or Brhadāraṇyaka upaniṣad (4/3/1). Only 7 or 11 levels are named there. Thus, we increase dilution by 100 at each step in homeopathy medicines, to increase ānanda which will increase happiness. Solar system has 30 dhāmas out from earth, so homeopathy has medicines of 30 power. From center of sun, earth field (including moon) is at 200 radius and largest planet Jupiter at 1000 radius, so next powers are 200 and 1000.

(40) Vyākaraṇa Mahābhāṣya (chapter 1) tells 1000 branches of Sāmaveda, but Sāma-tarpaṇa-vidhi names 13 branches only. Among them too, only 2 are available-Kauthumī and Jaiminīya which indicates fields in opposite directions. Kutha =to spit (Pāṇini dhātupāṭha, 10/165) or to cleanse (4/12), or to synthesise (9/46). Jaiminīya consumes inside, as Jāmi =to eat or consume (1/317). It is origin of Jamin (earth) in Persian, also in Nirukta (7/24).

(41) All objects were named by Brahmā as per their functions-

सर्वेषां तु स नामानि कर्मणि च पृथक् पृथक्। वेद शब्देभ्य एवादौ पृथक् संस्थाश्च निर्ममे॥ (मनुस्मृति १/२१)

ऋषयस्तपसा वेदानध्यैषन्त दिवा निशम्। अनादि निधना विद्या वागुत्सृष्टा स्वयम्भुवा॥

नाना रूपं च भूतानां कर्मणां च प्रवर्तनम्। वेद शब्देभ्य एवादौ निर्ममीते स ईश्वरः॥ (महाभारत, शान्ति पर्व २३२/२४-२६)

Bible, old testament also tells that Adam had given names to all objects.

(42) *Nārada* in his *smṛti* tells that *Brahmā* had started writing, otherwise world would not have progressed. *Bṛhaspati* also in his *Āhnika-tattva* tells that people forget spoken word within 6 months, so *Brahmā* started practice of writing them on paper.

नाकरिष्यद् यदि ब्रह्मा लिखितम् चक्षुरुत्तमम्। तत्रेयमस्य लोकस्य नाभविष्यत् शुभा गतिः॥ (नारद स्मृति)

षष्ठमासिके तु समये भ्रान्तिः सज्जायते यतः। धावाक्षराणि सृष्टानि पत्रारूढान् यतः परां॥ (बृहस्पति-आहिक तत्त्व).

(43) *Brahmā* taught grammer to *Bṛhaspati*, then it went to *Indra*, *Bharadvāja*, *Rṣis* and *Brāhmaṇas*. ब्रह्मा बृहस्पतये प्रोवाच, बृहस्पतिरिन्द्राय, इन्द्रो भरद्वाजाय, भरद्वाजं ऋषिभ्यः, ऋषयो ब्राह्मणेभ्यः: (ऋक् तत्त्व)

(44) Letter codes started with *Maheśvara*, on whose basis *Pāṇini* wrote his grammer.

येनाक्षर समाम्नायम् अधिगम्य महेश्वरात्। कृत्स्नं व्याकरणं प्रोक्तम् तस्मै पाणिनये नमः। (पाणिनीय शिक्षा, अन्तिम श्लोक)

Grammer of *Maheśvara* was like ocean, *Bṛhaspati* took a potful from that, its 100 part was taken by *Indra* and *Pāṇini* grammer is just some drops of water.

समुद्रवत् व्याकरणे महेश्वरे ततोऽम्बु कुम्भोद्धरणं बृहस्पतौ।

तद्भाग भागाच्च शतं पुरन्दरे कुशाग्रं विन्दूत्पतिं हि पाणिनौ। (सारस्वत भाष्य)

See also-*Sanskrita vyākarana kā Itihāsa*-by Pt. *Yudhiṣṭhir Mīmānsaka*-Ramlal Kapur Trust, Sonepat, Haryana.

(45) Names were first explained by *Bṛhaspati*-

बृहस्पते प्रथमं वाचो अग्रं यत् प्रैरत् नामधेयं दधानाः।

यदेषां श्रेष्ठं यदरि प्रमासीत् प्रेणा तदेषां निहितं गुहाविः॥ (ऋक् १०/७१/१)

Bṛhaspati taught grammer to *Indra* word by word. That was *Śabda-pārāyana* (study of words)- बृहस्पतिरिन्द्राय दिव्यवर्ष सहस्रं प्रतिपदोक्तानां शब्दपारायणं प्रोवाच। (पतञ्जलि-व्याकरण महाभाष्य १/१/१)

Same is described in *Brahma-vaivartta purāna*, *Prakṛti khaṇḍa* (5/27, 28). *Uśanā* (oceans ruled by his forefather *Varuṇa*) was preceptor of *Asuras* and opponent of *Bṛhaspati*-preceptor of *Devas*. He was also called *Kavi* or *Kāvya* (=poet, creator), his place is *Kaba* in Arab. He decried grammer of *Bṛhaspati* as fatal disease, as it can not be studied in a life time.

तथा च बृहस्पतिः-प्रतिपदम् अशक्यत्वात् लक्षणस्यापि अव्यवस्थितत्वात् तत्रापि सखलित दर्शनात् अनवस्था प्रसंगाच्च मरणान्तो व्याधिः व्याकरणमिति औशनसा इति। (न्याय मञ्जरी, पृष्ठ ४१८).

(46) On request of *Devas*, *Indra* removed the difficulty by breaking words into *prakṛti* (root words) and *pratyaya* (suffixes)-as explained by *Sāyaṇa*. He classified letters as per sound (*vāk*) with help of *Vāyu*, specialist on sounds. So, it was called *vyākarana* (grammer)=separation of *vāk*. (*Taittirīya samhitā* 6/4/7). Same description is in *Maitrāyaṇī samhitā* (4/5/8), *Kāṇva samhitā* (27/2), *Kapiṣṭhala samhitā* (42/3) also.

वाग्वै पराची अव्याकृतावदत्। ते देवा इन्द्रम् अन्द्रवन्-इमां नो वाचं व्याकृत-इति। ... तामिन्द्रो मध्यत अपक्रम्य व्याकरोत्। तस्मादिदं व्याकृता वागुद्यते इति। (तैत्तिरीय संहिता ६/४/७)

सायण भाष्य-तामखण्डां वाचं मध्ये विच्छिद्य प्रकृति प्रत्यय विभागं सर्वत्राकरोत्।

स (इन्द्रो) वाचैव व्यर्तयद् (मैत्रायणी संहिता ४/५/८)

(47) First *Ganapati* (creator of script) was named *Brahmaṇaspati*-he was *Kavi* (poet, creator) and *Guru* (teacher) also. In his *Ganapati Atharva-śīrsa* (7), letters topped by crescent moon are stated (*ardhendu-lasita akṣara*). *Rgveda* (2/23) states his creation-

गणानां त्वा गणपतिं हवामहे कविं कवीनामुपमश्रवस्तम्। ज्येष्ठराजं ब्रह्मणा ब्रह्मणस्पत आ नः शृणवन्नृतिभिः सीद सादनम्॥। विश्वेभ्यो हित्वा भुवनेभ्यस्परि त्वष्टाजनत् साम्नः कविः। स ऋणया चिदृणया ब्रह्मणस्पतिर्द्विहो हन्तमह ऋतस्य धर्तरि॥१७। (ऋक् २/२३/१, १७)

Rna (minus) is indicated by a line (-). Its small part (*chid-ṛṇa*) is a point. *Rta* is its spread or writing with it (note 34)-that becomes visible *Rk* or form of words (note 1).

(48) Next *Ganapati* was *Bṛhaspati*, son of *Angirā* (note 45). Sign of letters A is vertical line. as A is part of every letter, it is in each letter, except Om (ॐ).

अकारो वै सर्वा वाक्। सैषा स्पर्शोऽमिर्वज्यमाना बह्वी नाना रूपा मवति। (ऐतरेय आरण्यक २/३/६)
अक्षराणामकारोऽस्मि (गीता १०/२३)

(49) Each letter has a vertical top line except Om (ॐ).

सर्वक्षरे शिरो रेखा अवक्रा प्रणवं विना ।

See also Indian History and Culture in 18 vols by BHISHMA, Mumbai-last chapter of part 1.

(50) *Vāk* explains *Brahma*, so it is written or engraved in heart-

यां पूषन् ब्रह्म चोदनीमारां बिभृष्याद्यृणे। तयासमस्य हृदयमारिख किकिराकृणु। (ऋक् ६/५३/८)

Brahma has 2 forms-*Sabda* (words) and *Para* (beyond). Person thorough in *Sabda-Brahma* attains *Para-Brahma*.

द्वे वाव ब्रह्माणो रूपे शब्द ब्रह्म परं च यत्। शाब्दे ब्रह्मणि निष्णातः परं ब्रह्माधिगच्छति। (मैत्रायणी आरण्यक ६/११)

Extent of *Brahma* and *Vāk* is same-

यत्र ह क्व च ब्रह्म तद् वाक्। यत्र वाक् तद्वा ब्रह्म। (ऐतरेय आरण्यक २/३/७)

सहस्रधा पञ्चदशानि उक्था यावद् द्यावा पृथिवी तावदित् तत्। सहस्रधा महिमानः सहस्रं यावद् ब्रह्म विष्ठितं तावती वाक्॥
(ऋक् १०/११४/८, ऐतरेय आरण्यक १/१६)

=15 types of *sahasra* (1000 are the source (3 in each of 5 world spheres). *Brahma* and *vāk* have same extent. See note (38) also.

(51) *Maheśvara* script of 50 letters includes 81 letters of *Śakti* script (of *Tantra*) also-

एवं पञ्चाशदामर्शं पूर्णं शक्तिमहेश्वरः। १९६। विमर्शात्मैक एवान्याः शक्तयोऽत्रैव निष्ठिताः।

एकाशीति पदा देवी ह्यत्रान्तर्भावविष्यते। १९७। (तन्त्रालोक, आह्विनिक ३)

(52) *Gaurī vāk* is undivided *salila* (water) which is cut in parts by waves of *vāk* (sound).

Mimāya =measure, making sound, writing.

गौरीर्मिमाय सलिलानि तक्षति एकपदी द्विपदी सा चतुष्पदी। अष्टापदी नवपदी बभूषी सहस्राक्षरा परमे व्योमन्॥

(ऋक् १/१६४/४१, अथर्व ९/१०/२१, १३/१/४१, तैत्तिरीय ब्राह्मण २/४/६/११)

1 part (*pada*)= complete *vāk*, meaning of a group of words.

2 *pada*=vowel + consonants.

4 *pada* = 4 parts of *Brahma* or *Vāk*.

8 *pada* = upto 8 letters in a syllable.

9 *pada* = upto 9 points of *prāṇa* (force) in a syllable.

25 letters = $(1+4)^2$, 36 letters = $(2+4)^2$

49 letters = $(1+2+4)^2$, 64 letters = 8^2 , 81 letters (*Tantra*) = 9^2 .

108 vowels = $(1+2) \times 4 \times 9$, 180 consonants = $4 \times (1+4) \times 9$, 289 letters = $(8+9)^2$.

Script is of 1000s letters in China beyond *Vyoma* which is Tibet.

(53) *Bhauma Atri* was seer of many verses of *Rgveda*. *Rk* (5/40) describes calculation of solar eclipse by him. *Rk* (1/117) tells that *Asuras* had put him in prison by tying him in a machine. Seer of *Rk* (10/143) is *Sāṅkhya Atri* who takes help of *Aśvinī-kumāras* to get him released. As *Sāṅkhya Atri* had used *Gāyatrī* script, *Gāyatrī-hṛdaya-upaniṣad* has stated *Gāyatrī* of *Sāṅkhyāyana gotra* (family). *Gāyatrī* is earth (2^{24} times size of man), which is place of *Agni* (compact matter). So, *Pingala sūtra* (3/63/66) has stated its *devatā* as *Agni* and *Gotra* as *Agniveśya*. *Nahuṣa* was descendant of *Atri* who had become king of *Devaloka*. He went near *Meru* (*Prāṇ-meru* = Pamir) and built a town *Deva-Nahuṣa* where *Atri* had done penance. Later on, descendants of *Atri* went to *Yavana* regions, so Dionysus (*Deva-Nahuṣa*) became their respected

figure. *Bhūmadhya* sea (Medi-terranean) was place of *Bhauma-Asura* killed by *Kṛṣṇa*. *Atri* was founder of *Pāñchajanya* (5 races) and was being tortured by *Rbīsa* of *Asuras*-
ऋषिं नरावंहसः पाञ्चजन्यमृवीसादत्रिं मुञ्चथो गणेन।

मिनन्ता दस्योरशिवस्य माया अनुपूर्य वृषणा चोदयन्ता (ऋक् १/११७/३)

यदिन्द्राग्नीं यदुषु तुर्वशेषु यद् द्रुत्युषु अनुषु पुरुषुस्थः।

अतः परि वृषण्या हि यातम् अथा सोमस्य पिबतं सुतस्य (ऋक् १/१०८/८)

Harivamśa purāṇa (1/30/17,18) tells that *Druhyu*, *Anu*, *Turvasu* were settled in west, north and south-east. *Mahābhārata*, *sānti parva* (208/28-34) tells that *Ātreyā Brāhmaṇas* lived in north and *Sārasvata*, son of *Atri* in south.

3 *Guṇas* of *Prakṛti* (nature) have been called 3 colours by which various forms are created. But *Aja* (*Puruṣa*) is one and detached.

अजामेकं लोहित शुक्ल कृष्णं बृह्वी प्रजाः सृजमानां सरूपाः। अजो द्वयेको जुषमाणो उनुशेते जहात्येनां भुक्तभोगामजोऽन्यः॥
(श्वेताश्वतर उपनिषद् ४/५, ऋग्वेद १/१६४/२०, अथर्व ९/१४/२०)

By *Ajā* of 3 *guṇas*, 5-dimensional world is created which is called 5 *odanas* (grains of rice) in *Atharva veda* (9/5).

(54) 36 elements of *Śaiva* philosophy are in many books. Most compact description is in commentary on *Śiva-sūtras* by *Svāmī Viṣṇu-Tīrtha*, published by *Yogashri Pitha, Muni ki Reti, Rishikesh, Uttaranchala..* It has also described classification of elements as per *Nāsadiya-sūkta* (Rk 10/122). 11 *Rudras* are in many *purāṇas*, *Mahābhārata*, and *vedas*. 11 *Rudras* are listed in 5 ways. *Linga purāṇa* (1/17/83-88) tells about number of letters for different purposes-

शुद्ध स्फटिक संकाशं शुभाष्टत्रिंशदाक्षरम्। मेधाकरमभूद् भूयः सर्व धर्मार्थं साधकम्। ८३॥

गायत्री प्रभवं मंत्रं हरितं वश्यकारकम्। चतुर्विंशति वर्णाद्वयं चतुष्कलमनुत्तमम्॥ ८४॥

अथर्वमसितं मंत्रं कलाष्टक समायुतम्। अभिचारिकमत्यर्थं त्रयस्त्रिंशच्छुभाक्षरम्॥ ८५॥

यजुर्वेद समा युक्तं पञ्चत्रिंशच्छुभाक्षरम्। कलाष्टक समायुक्तं सुश्वेतं शान्तिं तथा॥ ८६॥

त्रयोदश कलायुक्तं बालाद्यैः सह लोहितम्। सामोदभवं जगत्याद्य वृद्धिसंहार कारकम्॥ ८७॥

वर्णः षडधिकाः षष्ठिरस्य मन्त्रवरस्य तु। पञ्चमन्त्रास्तथा लब्ध्वा जजाप भगवान् हरिः॥ ८८॥ (लिङ्ग पुराण १/१७)

38 letters-for intellect, wealth (37 letters of *Maya* script + Om)

24 letters of *Gāyatrī*-For influence, fame.

33 letters (*Kṛṣṇa Atharva*)-For *Abhichāra* (curse, destruction etc)

35 letters of *Yajurveda* (*Gurumukhī*)-*Yajña* (cycle of production), peace.

66 letters of *Sāma*-for music.

(55) There are 8 places of sound in body-of them, 3 are for vowels-

अष्टौ स्थानानि वर्णनामुरः कण्ठः शिरस्तथा। जिह्वामूलं च दन्ताश्च नासिकोष्ठौ च तालु च। (पाणिनीय शिक्षा)

(56) महाभारत, वनपर्व, अध्याय २३०-मार्कण्डेय उवाच-

विवक्षन्तं ततः शक्रं किं कार्यमिति सोऽब्रवीत्। उक्तः स्कन्देन ब्रूहीति सोऽब्रवीद् वासवस्ततः॥ ७॥

अभिजित् स्पर्धमाना तु रोहिण्या अनुजा स्वसा। इच्छन्ती ज्येष्ठतां देवी तपस्तप्तुं वनं गता॥ ८॥

तत्र मूढोऽस्मि भद्रं ते नक्षत्रं गगनाच्युतम्। कालं त्विमं परं स्कन्द ब्रह्मणा सह चिन्तय॥ ९॥

धनिष्ठादिस्तदा कालो ब्रह्मणा परिकल्पितः। रोहिणी ह्यभवत् पूर्वमेवं संख्या समाभवत्॥ १०॥

= After, *Abhijit* fell (from north pole), *Kārttikeya*, on advice of *Indra* consulted *Brahmā* and started year with *Dhaniṣṭhā* (entry of sun in that star). Before *Vaivasvata Manu* in 13,902 BC, that was period of start of rains in 15,800 BC.

अध्याय २३१-एव सेन्द्रं जगत् सर्व श्वेतपर्वतसंस्थितम्। प्रहृष्टं प्रेक्षते स्कन्दं न च ग्लायति दर्शनात्॥ २७॥

यदाभिषिक्ते भगवान् सैनापत्येन पावकिः। तदा सम्प्रस्थितः श्रीमान् हृष्टो भद्रवटं हरः॥ २८॥

अथाब्रवीन्महासेनं महादेवो बृहद् वचः। सप्तमं **मारुतस्कन्धं** रक्ष नित्यमन्द्रितः॥५५॥ मुमोच शक्ति राजेन्द्र महासेनो महाबलः॥५५॥
उत्तरा कुरवस्तेन गच्छन्त्यद्य यथा सुखम्। क्षिप्तां क्षेप्ता तु सा शक्तिर्हत्वा शत्रून् सहस्रशः॥५८॥

=Kārttikeya was commander of Deva army, he was protecting Mārut-skandha (space wing of force) and opened way to Uttara-Kuru-towards north America. Śveta mount and Bhadra-vāṭa are there. That was Pātāla ruled by Asura king Bali after he gave up rule of 3 lokas (Russia, China, India) to Indra.

ॐ ब्रह्म ह वा इदमग्र आसीत्..... तस्य श्रान्तस्य तप्तस्य सन्तप्तस्य ललाटे स्नेहो यदार्द्धमजायत... महद्वै यक्षं सुवेदमविदामह इति। ... एतं सुवेदं सन्तं स्वेद इत्याचक्षते॥१। सर्वेभ्यो रोमगर्त्तेभ्यः स्वेदधाराः प्रस्पन्दन्तः। ... अहमिदं सर्वं धारयिष्यामि.... तस्मात् धारा अभवन्॥२॥॥ (गोपथ ब्राह्मण पूर्व १/१-२)

=In the beginning, there was Brahma only. By work and heat, sweat flowed from his fore head-that suveda was called sveda and it held (joined) roma-garttas (hair-roots, point objects). Thus, Brahma became Su-Brahma.

(57) Prajāpati (creator), Anna (grains of creation), Viśa (collection of beings), paśu (animals, who see only)-all are stated as 17-

प्रजापतिर्वै सप्तदशः: (गोपथ ब्राह्मण उत्तर २/१३, ५/८, तैत्तिरीय संहिता १/५/१०/६)

सप्तदशः: प्रजापतिः (तैत्तिरीय संहिता १/३/३/२, ऐतरेय ब्राह्मण ८/४)

अन्नं वै सप्तदशः: (ताण्ड्य महाब्राह्मण १/७/७, १७/९/२, शतपथ ब्राह्मण ८/४/४/७)

विशः सप्तदशः: (ताण्ड्य महाब्राह्मण २/७/७, १७/९/२, शतपथ ब्राह्मण ८/४/४/७)

पशवो सप्तदशः: (ताण्ड्य महाब्राह्मण १९/१०/७)

Anna, viśa (village, country), paśu (living beings)-all are arranged on earth surface. Arrangement of a sign on surface is in 17 ways by which a plane can be covered fully. It has been called Plane crystallography theorem in books of Algebra, e.g. Algebra by Michel Martin-Prentice Hall, pages 172-173.

Pt. Madhusudan Ojha in his book *Brahma-siddhānta* (Rajasthan Patrika, Jaipur) at pages 107-110 has described 17 chiti (arrangement, design) of Brahma-

<i>Bīja chiti-Avidyā, kāma, karma, vīrya, śukra</i>	5
<i>Deva chiti-Avidyā, vāyu, āditya, chandra, soma</i>	5
<i>Bhūta chiti-Ākāśa, vāyu, teja, ap, bhūmi</i>	5
<i>Prajā</i> (living beings), vitta (non living)	2
<i>Avidyā, vāyu</i> , both have 2 forms each.	Total 17

(58) Vowel with sound E is triangular-

त्रिकोणमेकादशमं वह्निगेहं च योनिकम्। शृङ्गां चैव एकारं नामभिः परिकीर्तितम्। (तन्त्रालोक, ३/९४, जयरथ व्याख्या)

Letters of H sound are with 2 loops-

विसर्ग एवमुत्सृष्ट आश्यानत्वमुपागतः। हंसः प्राणो व्यञ्जनं च स्पर्शश्च परिभाषते। (तन्त्रालोक ३/१४२)

त्रयस्त्रिंशो व्यञ्जनं च द्विकुञ्जः स्पर्श एव च (निघण्टु-यास्क के अतिरिक्त अन्य)

(59) *Brahmā* of earth (man) was in *Puṣkara*, which is 12° east from Ujjain (1 muhūrtta =48 minute west)- *Viṣṇu Purāṇa* (2/8/26)-

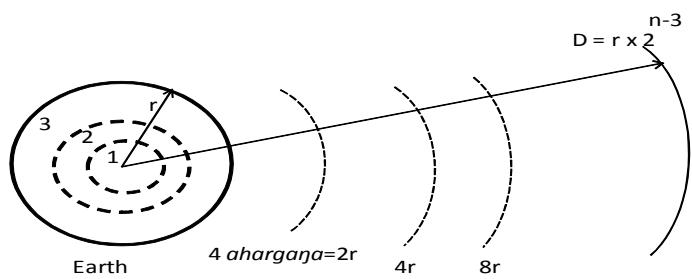
न्यग्रोधः पुष्कर द्वीपे ब्रह्मणः स्थानमुत्तमम्। (ब्रह्म पुराण ८/८७)

Like *Brahma* as creator of cosmos, human *Brahmā* created institutes of world-
ब्रह्म ह ब्रह्माणं ससृजे। स खलु ब्रह्मा सृष्टि चिन्तामापेदे (गोपथ ब्राह्मण पूर्व १/१६)

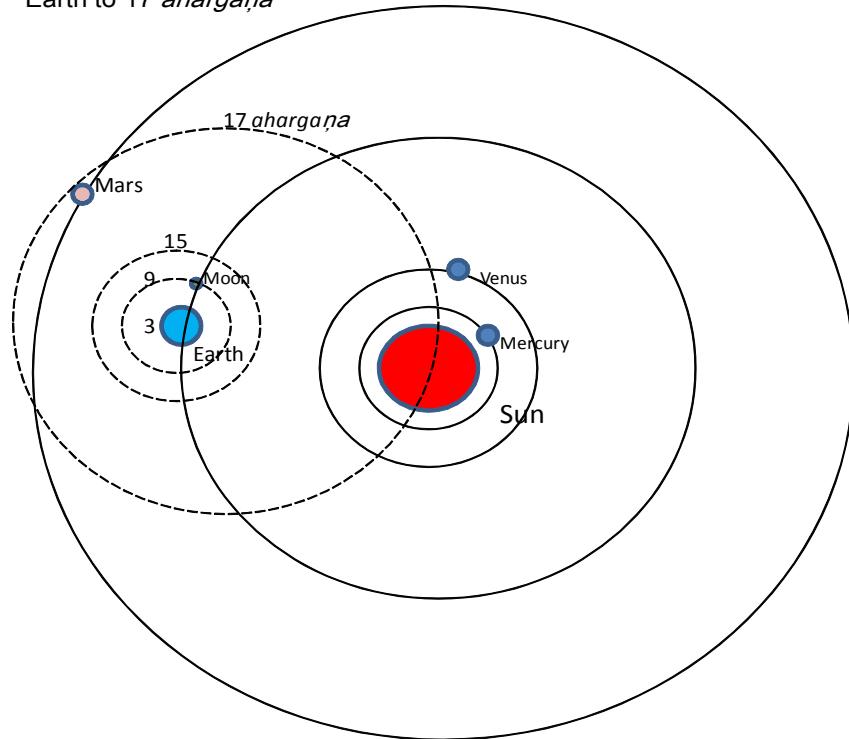
Human *Brahmā* started world order from *Puṣkara* through *Atharvā-*
त्वामग्ने पुष्करादध्यर्थवा निरमन्थत मूर्धनो विश्वस्य वाधतः।

तमुत्वादध्यङ्कः ऋषिः पुत्र ईर्धे अर्थर्वणः वृत्रहणं पुरन्दरम् (ऋक् ६/१६/१३)

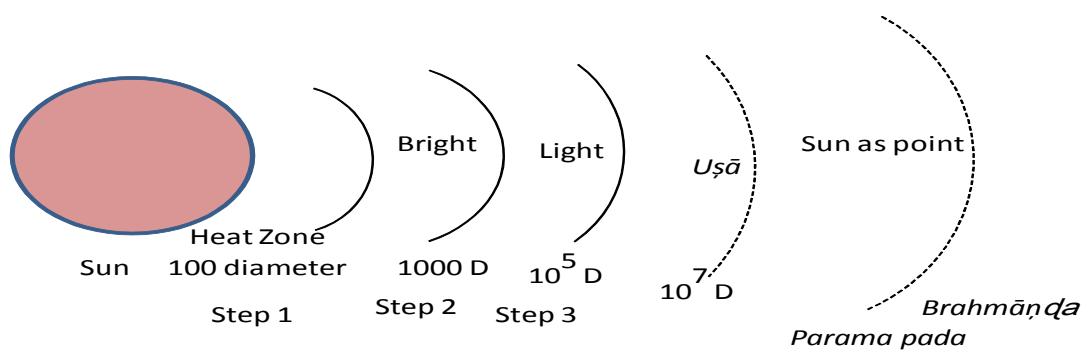
Ahargāṇa Scale

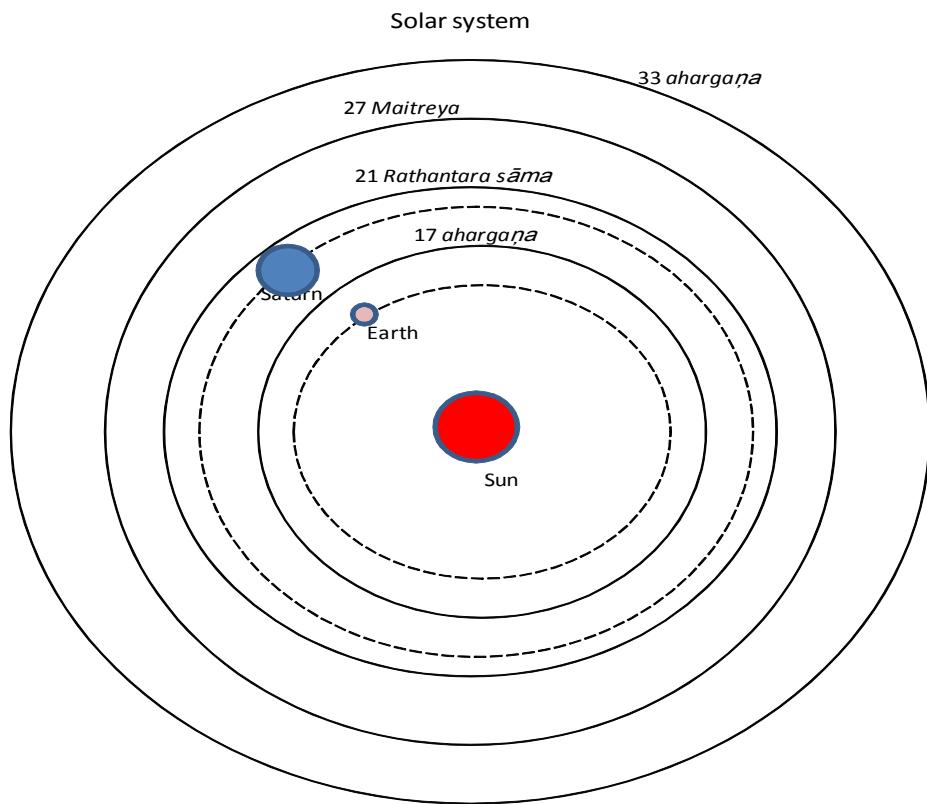


Earth to 17 ahargāṇa



Solar System-Steps of Viṣṇu





Galaxy and its spiral arm

